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Sketch for a Memorial Library.
Cottage No. 4, Watch-Hill, R. I.
House, Louisville, Ky.
House, Toronto, Canada.
Ventilating Tower of the Presbyterian Hospital, New York.

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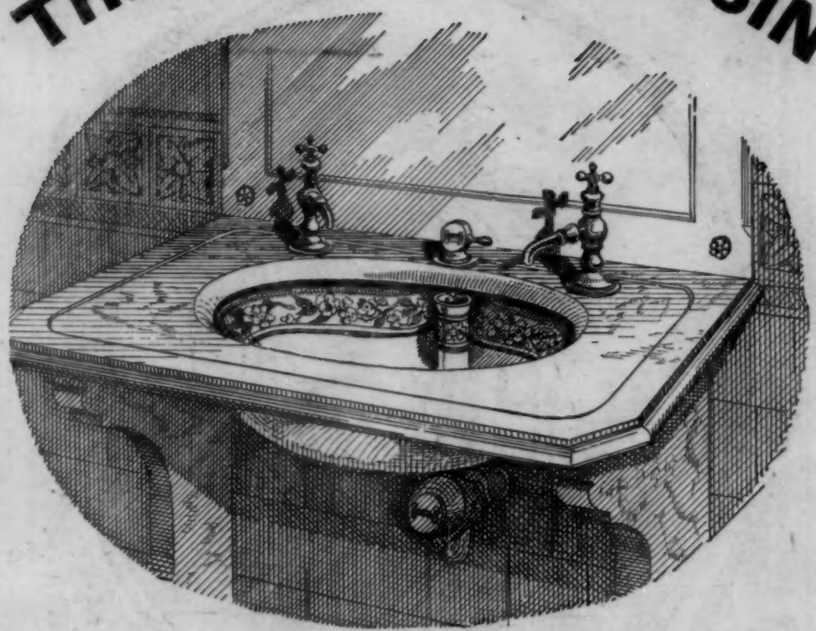
PLAN OF BASIN.

THE SANITAS BASIN

QUICK EMPTYING, ORNAMENTAL.



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THE annual report of the Supervising Architect, the advance sheets of which have reached us, is an unusually interesting public document. Taken as a whole, it fully confirms the idea which we had derived from the reports of the recent investigation into the conduct of his office, that the present Supervising Architect had incurred the unfavorable criticism of outsiders mainly through the efforts, praiseworthy in a private citizen, but unpardonable in a public official, which he had made to promote expedition and economy in administration. We cannot say that we approve of some of the economies effected, the reduction in the cost of designs and specifications, while involving, probably, no practical disadvantage, having the serious æsthetic objection of tending to aggravate in the highest degree the commonplace, monotonous and ill-studied character which has been so long the reproach of our official architecture; but the mere existence of the office is a standing defiance to æsthetic considerations, and Colonel Freret is certainly not at fault in endeavoring to administer the business entrusted to him as efficiently as possible, and in something the spirit in which those who founded the office intended that it should be carried on. Aside from this, however, many really useless extravagances have been stopped, and the very tangible saving of three hundred and thirty dollars a day effected in the expenses of the office. Nevertheless, the advantage to the public of real architectural service, as distinguished from routine construction, has not been forgotten, and Colonel Freret proposes that designs for at least some of the public buildings shall hereafter be secured by competition. In regard, also, to the local supervision of the public building work, he strongly urges that the superintendence of such work should be given to properly qualified architects, residing in the locality, who should furnish their own assistants and clerical work, and should be paid by a fixed commission on the cost of the building erected under their care; the commission which he proposes varying from five per cent, where the cost does not exceed two hundred and fifty thousand dollars, to two and one-half per cent, where the cost is more than five hundred thousand dollars.

IN regard to the matters of procuring sites for buildings, and employing outside assistance in preparing drawings, the Supervising Architect gives explanations which agree with those made before the Investigating Committee, and, it need not be said, could hardly be otherwise than satisfactory to any one familiar with such work. Entering, however, more into detail, he gives some rather curious statistics of the cost to the Government of draughtsmen's work, both within and outside of the office. From these, which are taken from the records of the office, it appears that the amount paid for the services of the draughtsmen in the office in preparing the drawings of the United States Court-house at Lynchburg, Va., a building which cost nearly one hundred and thirty-five thousand dollars, was forty-six hundred and thirty-one dollars, or three and four-tenths per cent on the cost of the building. The draughtsmen's work on the plans for the Court-house at Fort Wayne, which cost two hundred and thirty-one thousand dollars, amounted to three per cent, and on the Quincy Court-house, which cost one hundred and eighty thousand dollars, to two and nine-tenths per cent, on the cost. The amounts thus quoted as paid for draughtsmen's services include nothing for tracing, photographic duplication, clerical work, or the salary of the Supervising Architect, or the services of experts, and, of course, nothing for local superintendence; and the cost of the buildings on which the percentage assigned to draughtsmen's work is calculated is the total amount of the appropriations, including all extras of every kind, and the cost of the site. In many cases this was probably as much as that of the building itself, so that the real percentage of cost of draughtsmen's services to that of the buildings was probably nearer four or five per cent than the two and two-tenths per cent which Colonel Freret finds to be the average for a long list of cases, selected at random from the office books, and covering buildings ranging in cost from fifty-five to four hundred and twenty-two thousand dollars. As an illustration of the great expense of making drawings in the Government office, he mentions also that the working-drawings for the heating apparatus alone for seven buildings, made in the years 1882 to 1884, cost the Government twenty-seven thousand nine hundred dollars. These facts are brought forward in the present instance to show only the saving which was effected by the letting of contracts to outside architects for the preparation of drawings, which so shocked and grieved the New York *Tribune* and some other Republican newspapers, but perhaps the new American Institute of Architects may do well to make a note of them, and when the time comes for presenting to Congress that unanswerable appeal, which is some time to be made, in favor of having our public architecture carried on as it is among all other civilized nations, it will find abundant material for supporting its argument in the archives from which Colonel Freret has quoted.

A CASE involving several points of interest to builders and architects was decided by the Supreme Court of California recently. A Frenchman named Monnier entered into a contract with a builder named Harding to construct for him a house. The contract provided that the building should be erected under the supervision of a certain architect, and that payments should be made on his certificate; and the firm of Renton, Holmes & Co. undertook to assist the builder by procuring bonds for him, and in other ways giving him financial support. Before the first certificate was given, Renton, Holmes & Co., feeling nervous about their money, obtained from the builder an assignment of his payments under the contract, and notice of the assignment, with a direction to deliver certificates to the assignees, and not to the builder, was given to the architect. At the same time, a man was sent to Monnier with a copy of the assignment, which he read to Monnier and showed him, asking him to sign it. Monnier declined to sign the paper, and told the man that he was a Frenchman and did not read or understand English, and asked him to come again when his clerk was in. Before any further notice was given Harding went to the architect, who gave him a certificate that payment of a thousand dollars was due, and Harding went with it to Monnier, who paid him the money. Renton, Holmes & Co., after trying unsuccessfully to get him to hand it over to them, sued Monnier for it, on the ground that he had sufficient notice of the assignment, and was bound to keep the money for them. The notice, they claimed, was given in two ways: once directly to him, and, secondly, through the medium of the architect, who, they claimed, was Monnier's agent, so that notice to him was constructively notice to his principal. On this point the court held that under the contract the architect was expressly authorized to see that the building was constructed in a good,

substantial and workmanlike manner, according to the plans and specifications; to sign and issue certificates that the work had been done in a faithful manner and to his satisfaction; and to decide any dispute that might arise respecting the true intent or meaning of the drawings or specifications. These were all the powers delegated to the architect by the contract, as the plaintiffs were aware, and the matter of making the payments, or of deciding how, when, or to whom they should be made, was not included in those powers, and, under the contract, in no way concerned the architect, so that the notice given to him was not notice regarding or connected with the subject-matter of his agency, and was, therefore, not properly constructive notice to his principal. As to whether notice given to Mounier, in a language that he did not understand, was such notice as the law required, the court held that it was "evidently not," and ordered judgment for the defendant.

THE reports of the Factory Mutual Insurance Companies for 1888 contain the usual amount of interesting matter. As might be expected, the statistics of the year's business show that the continued investigations of the principles of fire-resisting construction made by the officers of the companies, and their steady influence in getting these principles adopted, have led to a constant decrease in the cost of mill insurance, and a saving of property which, for the ten years which have elapsed since the companies began to try to influence construction, is estimated at five million dollars. It is fortunate that, as mill-construction is brought more and more into conformity with the rules now laid down, the investigation of the causes and results of fires becomes easier and more accurate, so that compliance with the rules as they stand furnishes the best means for promoting improvement in them. At present, the observation of mill fires is very accurate and extensive. During 1888, two hundred and ten fires were reported upon, the causes ascertained or inferred, the loss estimated, and all the circumstances of their origin, spread and extinction described so far as they were known. Of the causes of fire in mills, friction or foreign matters in the machinery is by far the most common, fifty-four out of the two hundred and ten fires of the year having been due to this. Next comes spontaneous combustion, which was responsible for forty-three fires, and next hot journals, which caused twenty. Four fires during the year were caused by steam-pipes. Of the appliances for putting out such fires, the most efficient by far are the automatic sprinklers, which played an important part in the extinction of nearly all the conflagrations that were finally subdued. Next to the automatic sprinklers, pails of water proved the most efficient instruments for the purpose. In very few cases was the loss more than a few hundred dollars, although in two instances cotton, blazing from friction or spontaneous combustion, was thrown by the machinery into bins containing ten to twenty thousand pounds of loose cotton fresh from the bale. In fact, the experience of the year, even more than that of the previous one, shows how much more to be relied upon these simple appliances are than the more ambitious apparatus of steam-pumps, engines and hose. In one case, where both a steam-pump and a rotary-pump had been provided, and were put in operation on the breaking-out of the fire, it was observed that they did not succeed in throwing any water on the fire, and, on investigation, it turned out that the valves were turned different ways, so that one pump raised water vigorously into the other, which as vigorously drove it back to its source. On readjusting the valves the water began to go where it was wanted, but by that time the fire had gained serious headway. Another weak point in the fire-service of many mills was rather unexpectedly brought to the attention of the insurance officials. There seemed to be a question whether the hose provided for the mills was in all cases what it should be, and a special agent was deputed to investigate the matter. On testing some nice-looking hose at certain factories, he found that more water leaked out of the hose on its way to the nozzle than escaped through the nozzle; and he learned further that "linen" hose could be bought for less than the cost of the flax of which it was supposed to be made. On making inquiries of dealers as to prices and quality of the hose they sold, he was asked in several places whether he wanted the hose for use or to pass the insurance inspector's examination, the requirements for these two objects being apparently very different in a dealer's eyes. As the bad hose is sold for about one-fourth the price of a serviceable article, one can see the dealer's interest in keeping it, but it is disgraceful that where a mill-superintendent asks for the best quality, and pays for it, he should have such rubbish palmed off on him. The hose investigation is to be continued, and will probably furnish valuable material for the next report.

THE Society of Swiss Architects and Engineers has adopted a new tariff of charges, somewhat similar in its classification to the German schedule which we described not long ago, but shorter. So far as the architects are concerned, the structures with which they deal are divided into three classes. The first class comprises rural buildings, factories, warehouses, workmen's barracks and simple school-buildings, without attempt at artistic treatment. The second class includes dwelling-houses and their dependances, hotels and boarding-houses, all public establishments, railway-stations and similar buildings; and the third class comprises interior and exterior decorations, furniture, monuments, fountains, and other objects of the kind. For designing and superintending constructions of the first class, architects are paid a commission varying from five per cent, where the cost is from two to five thousand dollars, to three and one-half per cent, where the cost exceeds one hundred thousand dollars. As stables or simple school-buildings costing more than a hundred thousand dollars must be rare, even in Switzerland, this seems to amount practically to a rate of about five per cent for all such constructions costing over two thousand dollars, and a higher rate for cheaper ones. For buildings of the second class, which must include much the largest part of the architect's work, the commission varies from six per cent, for those costing between two and five thousand dollars, to four and one-half per cent, where the cost exceeds one hundred thousand. This commission, however, does not cover services in regard to the decoration of the house. These come under the third class, for which the commission varies from six per cent, where the cost is more than one hundred thousand dollars, to ten per cent, where it is between two and five thousand. In all cases where special supervision is desirable a clerk-of-works is to be employed, and paid by the client, and where a clerk-of-works is not employed the client must pay for measuring up work, for verifying the builder's accounts, and similar service, independent of the architect's commission. All travelling expenses incurred by the architect in connection with the work, whether in supervision or other service, are to be repaid in full, and in addition to these he is allowed in all cases, beyond his commission, a fixed sum, or *frais de déplacement*, as compensation for being absent from his office, amounting to four dollars for each half-day, or six dollars for a whole day. The commission for work costing less than two thousand dollars, in any class, is to be fixed by special agreement, and where a design made by one architect is given to another to execute, which can only be done by consent of the former, the compensation of the second, for what he is called upon to do, must be increased by twenty per cent. The anomaly, common to sliding scales of charges, by which, for example, the commission on a ninety-eight-thousand-dollar building would be larger than on one costing a hundred and four thousand, is got over by providing that in all cases the commission shall be reckoned at the highest figure allotted to the class below, until a point is reached at which the fees, reckoned at the rate proper to the class, shall reach a sum in excess of that figure. Thus the same fee, nine hundred dollars, is charged on all buildings of the first class costing from twenty thousand dollars to twenty-two thousand five hundred. After this the fee becomes a larger sum, reckoned by the lower scale.

ONE of the most remarkable and satisfactory things about the Paris Exposition of 1889, which will open in a few weeks, is the precision with which the estimates have been followed in regard to the buildings. We are so accustomed to see the actual cost of buildings of this kind far exceed the estimates that it is surprising, as well as gratifying, to find that the palace for the exhibition of works of art and skilled manual labor cost seventy-eight thousand dollars, or six-and-one-half per cent, more than the original estimates; the Machinery Hall, which cost fifteen hundred thousand dollars, exceeded the estimates by only four per cent; and the remaining building, the Palace of Diverse Arts, exceeded the estimates by less than two per cent in a total of twelve hundred thousand dollars. The cost of the contingencies, moreover, has been much less than was anticipated, so that the net result, instead of an enormous excess of cost over the estimates, shows a balance of six hundred and fifty thousand dollars which will not be needed.

BUILDERS' HARDWARE.[1]—XX.

ORDINARY LOCK AND LATCH.

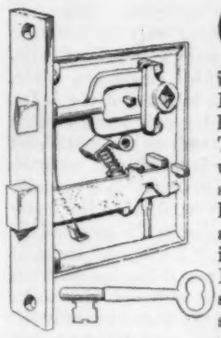


Fig. 304. Lock. P. & F. Corbin.

ONE of the cheapest locks in the market, and one which, considering the price, is a very fair article, is manufactured by P. & F. Corbin, Figure 304. Everything about this lock is of cast-iron except the springs. The single lever, shown by dotted lines under the bolt-tail, *A*, has a small shoulder instead of gatings, and the latch has only one steel spring. It is a lock that offers no real security, but it is worth all it costs, $1.50 per dozen. It works easily, and is so simple in construction that it seems capable of withstanding considerable wear, perhaps more than a better article. Figure 305 is a more expensive, one-lever lock by the same manufacturers, having double springs for the latch. The form of follow, *A*, and the arrangement of springs in this example is that which has been found to give the best results, generally speaking, and which has been adapted to a great many varieties of locks. When the latch is forced back, upon closing the door, the lower spring alone is compressed, reacting against the plate and posts at *B*, but when the door-knob is turned in either direction the follow forces back one of the arms of *C*, compressing the upper spring, while a shoulder on the lower part of *C* catches on *D*, which is attached to the latch-bolt, thus bringing both springs into play. This would be termed an easy spring-latch, in that the knob can be turned with equal ease in either direction.

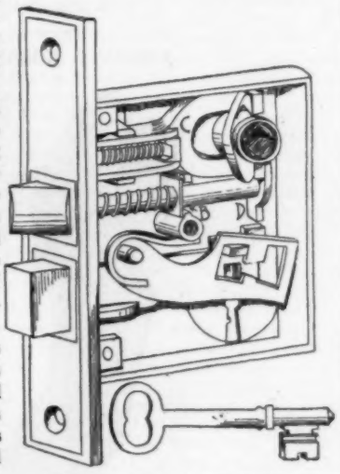


Fig. 305. Lock. P. & F. Corbin.

Figure 306 illustrates a lock manufactured by Nimick & Brittan, in which the lever and bolt are essentially the same as in the preceding example, but which has a follow arranged upon a different principle, lugs being cast on the top and bottom so as to bear against the irregular spring-lever *A*, and the latch-bolt being pinned to an extension of the lever. The follow and lever shown in Figure 307, a lock by J. B. Shannon & Sons, is of much the same description. In both of these, the knob can be turned more easily to the left than to the right by reason of the unequal leverage against the piece *A*, though the difference in resistance is partially compensated for by making the shoulders on the follow of unequal lengths. The lock shown by the last figure has three levers, and is catalogued as being hand-made. In Figure 306 the latch is reversible so that the lock can answer for either a right or a left hand door.

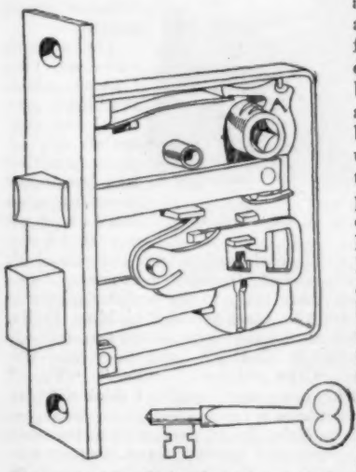


Fig. 306. Reversible Mortise Lock. Nimick & Brittan Mfg. Co.

[1] Continued from page 87, No. 687.

The "Niles" locks, of which Figure 308 is a type, are all made to be operated by knobs having a follow cast solid onto the spindle. The action of the knob will be referred to later on. The figure shows only the follow, *A*, which is inserted from the back. The "Niles" locks have the name of wearing very well. The levers are of steel and are pretty well fitted, for a machine-made lock, and the springs are also of steel, the bolt being the only portion of the mechanism for which brass is employed. As in some of the previous examples, the knob turns more easily towards the left than the right. If instead of the irregular, hinged lever, *B*, a form were adopted similar to that shown in Figure 305, the "Niles" locks would leave little to be desired, and would compare favorably with anything else in the market.

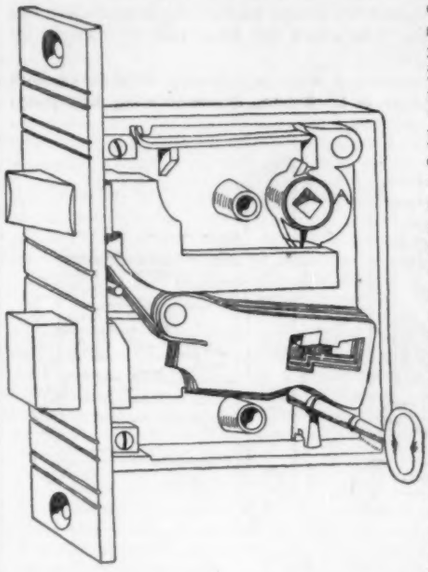


Fig. 307. Mortise Knob-Lock. J. B. Shannon & Sons

An examination of the figures will show that, except in the very cheapest example, the face-plate of the lock is screwed to the lock-case in such a manner that it can be moved slightly and set at whatever bevel may be desired in order to fit the door. Figure 309 shows a lock of the Ireland Manufacturing Company in which all the parts can be reversed. The latch is

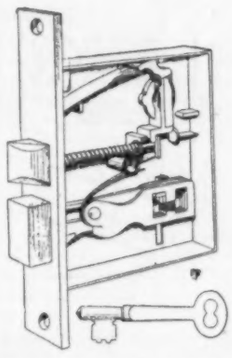


Fig. 308. Niles Lock. Chicago Hardware Co.

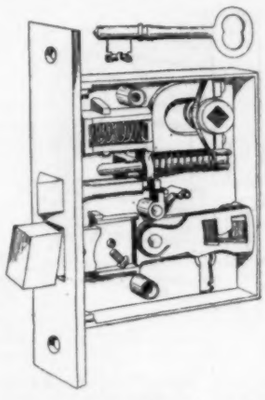


Fig. 309. Reversible Lock. Ireland Mfg. Co.

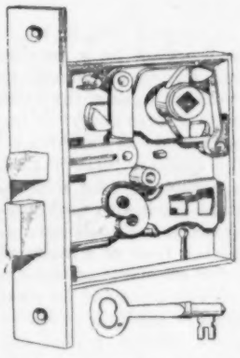


Fig. 310. Reversible Lock. Ireland Mfg. Co.

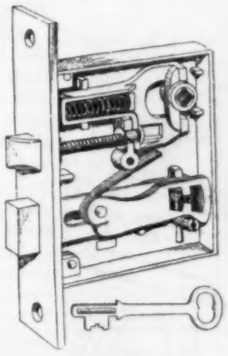


Fig. 311. Three-Lever Lock. Hopkins & Dickinson Mfg. Co.

simply drawn out and turned over. The bolt-tail is in two sections and the outer part can be unscrewed and reversed to match the change in bevel. Otherwise this lock is of the ordinary type. Figure 310 shows another lock manufactured by the same company, in which the hand can be changed by turning the latch over.

Figure 311 illustrates a very satisfactory three-lever lock made by the Hopkins & Dickinson Manufacturing Company.

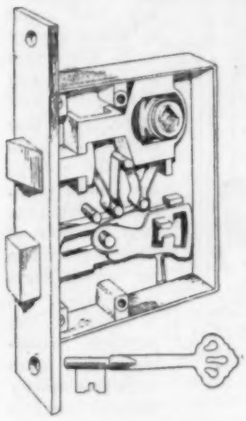


Fig. 312. Reversible Lock. Hopkins & Dickinson Mfg. Co.

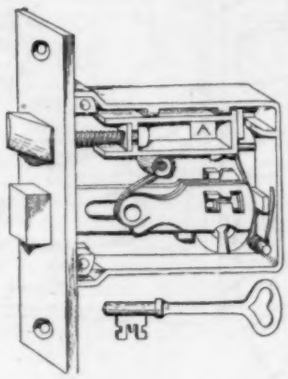


Fig. 313.

The key-hole in this example is protected by a small rotating curtain similar to those described in connection with the store-door locks, intended to aid in securing the levers from being tampered with. Figure 312 is another lock by the same company, in which the latch-springs are of phosphor-bronze, and

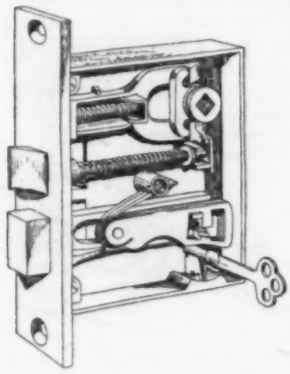


Fig. 314. Standard Lock. Yale & Towne Mfg. Co.

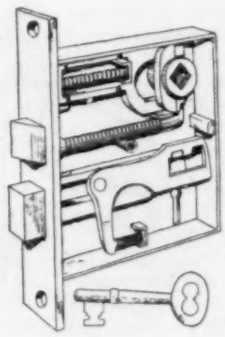


Fig. 315. Lock. Enoch Robinson.

quite ingeniously, though very simply arranged so as to give an easy spring-latch. The latch is reversible. The lock is shown with a single-lever, but is also made with three, if desired. Both of these locks are excellently finished.

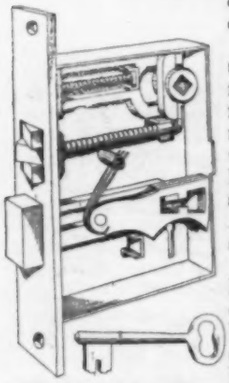


Fig. 316. Lock. Enoch Robinson.

Figure 313 shows a lock in which the latch is operated by a peculiar form of knob having no spindle or follow, but working against the latch mechanism with a lever at *A*. It has the same disadvantage as the "Niles" locks, that the ordinary form of knob and spindle cannot be used with it. Aside from the latch, this lock presents nothing out of the usual line.

Figure 314 is a type of a make of locks which for simplicity of design, carefulness of execution and for good lasting qualities is hardly excelled by anything in the market, except the best hand-made work. The Yale "Standard" locks, as they are termed, to distinguish them from the ordinary Yale pin locks, are made with steel levers, and brass springs, bolts and follows. They are so perfectly simple as to require no description. The best forms of springs, levers, and follows are used in these locks, so that they seldom fail to give satisfaction.

Excepting Figure 307, all of the foregoing locks are machine-made, the levers being hand-fitted only in the best grades. Figure 315 shows one of "Robinson's" cheapest hand-made locks costing $1.25 each, fitted with a single iron lever, bronze or brass being used only for the follow and the bolts. Figure 316 is a better example of Robinson's work, costing $3.50 per lock. In this the levers, as well as the bolts and the follow are of bronze, and the latch is fitted with an anti-friction strike. The interior of a machine-made lock usually is finer looking than that of one made by hand, as in the latter all the care is concentrated on the adjustment of the mechanism. There is no denying the excellence of the "Robinson" locks, at least it would be difficult to persuade many Boston builders that they are not the best to be had, and although the locks are much more expensive than the best of the Yale "Standards" or the Hopkins & Dickinson locks, they are used a great deal on all kinds of work. It is a satisfaction to know that there is one corner of this country where careful, conscientious work can command its own price, in the face of the competition which exists in the hardware trade.

(To be continued.)

AUGUSTE RODIN.[1]—V.

Figure belonging to the Door. A. Rodin, Sculptor.

AS Rodin had many pleasant memories of Belgium, he was very glad that "The Age of Brass" was sent in October, 1880, to an art exhibition at Ghent, in that country, by M. Turquet. While the sculptor was living in Belgium, he had exhibited in that city his bust of Dr. Thiriar, and had received for it, from J. Rousseau, a writer for *L'Echo du Parlement*, warm and intelligent appreciation.

The authorities of the Ghent exhibition had provided two gold medals to be given to exhibitors from other countries, and Rodin was one of them. The statue received an especial consideration from the pen of M. Camille Lemonnier, a distinguished Brussels art-writer. Some months after the exhibition there came to the sculptor's humble lodgings an elderly gentleman, who, when received by Mme. Rodin, appeared somewhat surprised at the simplicity of the surroundings that met his gaze. He asked if M. Rodin lived there, and was answered in the affirmative. "The sculptor?" "Yes." "Then," said he, "I have come to bring him something that I think will give him pleasure," and he unrolled from a carefully-prepared package a gold medal, and presented it to Mme. Rodin, expressing at the same time, in the most fatherly manner and familiar terms, his appreciation of the talents of her husband, his firm belief in the certainty of his future success, and the pleasure he enjoyed in performing the duty of bringing this medal, that had been given to the sculptor at the Ghent exhibition for his noble statue "The Age of Brass." "I think," says Rodin, "that this was the loveliest thing that ever happened to me. The gentleman was M. Rolin Jacquemyns, a former Belgian minister, who, by the way, was succeeded by his son. He spoke as though I had not yet succeeded, but should eventually, by reason of his good wishes and a little more work and patience."

[1] All rights reserved. Continued from page 101, No. 688.

In this same year the "St. John" and "The Broken Nose" were sent to an exhibition at Nice. There, also, the sculptor was awarded a gold medal, but under somewhat different conditions than at Ghent. The Nice authorities provided that those to whom such a distinguished recompense was given must pay for its cost. As Rodin had not then any money to spare for this purpose, he has not yet come into the possession of the Nice medal.

In the *Salon* of 1881, Rodin exhibited a plaster statue called "The Creation of Man" and the "St. John" in bronze, and received two votes for the Medal of Honor. In these exhibits, the press, for the first time, took a general, warm, and very decidedly varied interest. Of the first statue, hardly anything was said in favor, it being the subject of both ridicule and caricature. Here and there, a writer found something in it that caused him to pause, think, and finally conclude that its author was looking for some result quite outside of the usual track of sculpturesque expression. "If it displeases by its democratic style of treatment, we must accord to it a power and intensity of life that forces us to forget its lack of moderate idealism to which we are accustomed. We are forced to believe that this artist is destined to open a new route, a route in which he will not be without followers and admirers." "His 'Creation of Man' is worthy of all praise. Without doubt, it is a striking reminiscence of Michael Angelo, an intended exaggeration, an extravagant expression of nature: this time, M. Rodin cannot be accused of having made, as he was two years ago, his work from moulds taken from the living model. Besides, the proportions are well preserved, and the muscular rendering reveals solid anatomical knowledge. The artist who shows such a hardy work must really have, as they say, 'something in his stomach.' M. Rodin is evidently haunted by some philosophical preoccupation; he wishes to show, in inert matter, a life that is unveiling itself little by little; and he has given to this personage the dolorous expression of a man waking from a heavy sleep in order to enter into the sad reality of active life. It is, perhaps, too daring to try to express such complicated things in an art that is, above all, entirely material, but when an artist succeeds he is not to be reproached. In any case, a conscientious and valiant effort like this of M. Rodin's seems to me much more worthy of eulogy than the commonplace compositions that appear every year, stringing out before our eyes a mythology of conventionalism, a lying history of unsuccessful antiquity." The "St. John" was much less condemned and much more commended. "Another artist of high value, who receives no justice, is M. Rodin. His 'St. John' preaching is beautifully executed, though criticised because the shoulder-blade on the right side is not in its right place, and the action of the legs do not show that he is walking, nor the feet that he is in repose, because they are too far apart. But we salute it for its personal style, superb and biblic rusticity, and the frank and unconscious effect it produces. It is a magnificent and noble work that our sculptors will no doubt examine with great attention, if not learn a little from it." "The 'St. John,' by Rodin, is a powerful piece of modelling; the awkwardness, and, at the same time, the simplicity of this personage could not be better expressed. It is evident that the artist is inspired by a deep regard for nature, and is willingly carried along in the extreme study of his model. The head is beautiful in character."

In the autumn of this year the "St. John" was sent to Brussels and exhibited in the "Salon of Twenty." If anything, there was a more lively discussion of its merits in that city than there had been in Paris. Condemned for its "vulgar pose, gesture and expression," and praised as "an exceptional piece of modelling; a work of the first order, one of the most remarkable efforts of present-day sculpture."

In the *Salon* of 1882, Rodin exhibited two busts: one of the eminent painter, J. P. Laurens, in bronze, and the other of Carrier Belleuse, in terra-cotta. With hardly an exception, the first took the critics by storm, nothing being left unsaid in its favor, while the last was cordially admired for its workmanship, and the sculptor occasionally called to account for making a head of such passing interest. The critics seemed to have become aware that a new and different style of man was claiming their attention. The Laurens' bust was a projectile that produced a retrospective, as well as a prospective effect, and, in speaking of its merits, the occasion was very often used to make up for the neglect that had been shown in past years to the "St. John" and "The Age of Brass."

M. Fourcaud wrote as follows in *Le Gaulois:* "Of all the young sculptors, I place this one (M. Auguste Rodin) the highest by a great deal. Last year, he exhibited a bronze statue of 'St. John, the Precursor,' old and thin, savage and nervous, and of an incomparable energy; this year he shows a bust of the painter, Jean Paul Laurens, nude shoulders, severe, proud, living, like a Gothic work of the strongest epoch. I have respect and a religious love for this expression of art integrity, powerfully and profoundly human. I expect from M. Rodin such masterpieces of robust individuality as will make everybody's eyes sparkle, and I count on him to make me prove that there is no such thing as modern sculpture outside of an intimate human expression, of typical movement, and of obstinate observation of the human body."

In the journal, *Exposition des Beaux-Arts*, M. Philippe Burty, wrote these observations: "That which M. Dubois seeks in physiognomy, M. Rodin looks for in character. His bust of M. Jean Paul Laurens is a very thrilling work. His manner of rendering form is rare in these times when every one comes from the same school where they have acquired nearly the same disposition not to learn from a close study of nature. There are many defects of taste in this composition. In spite of this, one feels that he faces a resolute artist, capable of rallying the young who feel how powerless academical electicism has left them in the face of the imperious need of the truth which the spirit of modern times requires. This doctrine, that they call naturalism, is that of which Rude and David d'Angers were high representatives." The question of Rodin deserving the Medal of Honor, had become a living one among his admirers, and the subject was canvassed in *L'Art*, in July, 1882, by M. Paul Leroi. He says: "What if the Medal of Honor is the least serious thing in the world, the question of art is the only thing that weighs, and this being true there can be but two competitors possible for the painting and the sculpture: M. Léon Lhermitte and M. Auguste Rodin, the sculptor of the portrait of M. J. P. Laurens, a bust that does honor to the greatest masters of all times. There is but one name to give to it, that of masterpiece. Look out for Rodin. He is going a long way."

During the year 1882, Rodin exhibited in four different cities, London, Vienna, Pau and Paris. In the first city he sent to the Grosvenor Gallery "The Broken Nose," and the "St. John" to the Royal Academy. His name had already reached London through the newspaper and art-journal correspondents, and generally with an intelligent appreciation of the superior qualities of his work, the principal exception being Mr. Edmond Gosse, the eminent writer and critic, who kindly suggested "the tempered sobriety" with which he would like to have M. Rodin handle the modelling tool. Mr. Gosse disliked the very qualities that the French writers hailed with the liveliest satisfaction, and is the only critic, out of the dozens that spoke of the sculptor, for or against, that presumed to advise him in regard to what sculpture was. As a general thing these two exhibits were received in London with the heartiest appreciation. A most enthusiastic notice of them was written by Arthur Warren, to the Boston *Transcript*.

When the Vienna exhibition took place, Rodin requested the Committee of the French Government to include in the list of selected works the two statues he had sold to the State. They were sent to Vienna, but so badly placed, that the newspapers from every country, included in their commendation of the figures a protest against the unworthy treatment they had thus received.

The exhibition in Paris, above alluded to, was called the Triennial *Salon*, and in it were shown the bronze copies of "The Age of Brass" and the "St. John," for the first time together in that city. Though badly placed, as usual, they became the objects of the most enthusiastic and general praise. The unique qualities of the statues were distinctly noticed, and their author often mentioned in connection with Donatello and Michael Angelo. As a whole, Rodin was set apart squarely and intelligently as representing, with one or two other sculptors, the highest note of French sculpture. For originality of workmanship, living interpretation of nature, and profound and scientific understanding of the human form, he was declared to be the greatest living representative. At the close of this exhibition the "The Age of Brass" was erected in the garden of the Luxembourg. Rodin was now fast becoming a recognized element in art in his native city. The striking and original character of his work was affecting serious minds in literature and art. He was making friends among the best people in these professions. His exhibits in the *Salon* of 1883, consisted of a bronze bust of Danielli, and one of A. Legros, a distinguished French artist and friend of the sculptor, living in London. They were spoken of with the warm accord given to his previous busts. Those of Laurens and Legros were shown in the Antwerp *Salon*, and were received with the same admiration that had been given to them in Paris. Besides several exhibitions of his busts, including one of Manon Lescaut and the "Petite Alsacienne,' in various places, Rodin, in company with a number of French painters, made one in London, at Egyptian Hall. His list comprised seven works, the plaster statue of "St. John," a figure of "Eve after the fall," half life-size, "The Broken Nose," busts of Laurens, Legros and the "Petite Alsacienne," and a little group in bronze called "The Children's Kiss." By all the London writers these works were regarded as the most striking part of the exhibition, and the point chiefly made was the varied capacity shown by the sculptor. Some then asserted that Rodin was not only greater than any other French sculptor, but the greatest one in the world.

The exhibition was not a pecuniary success, but it served to make for Rodin an excellent London reputation.

To the *Salon* of 1884, the sculptor sent a bronze bust of Victor Hugo, and a plaster one of the distinguished sculptor, Jules Dalou. The former was cast by the wax-process, as had been the bust of Laurens, and this incident was noticed, not only as indicating the care the sculptor took in the reproduction of his modelling, but as an opportunity to pay a deserved tribute to the founder, Gonon. With rare exceptions these busts were welcomed by the press with increased acclamations of praise. The Paris correspondent of the London *Daily News* referred to them as the work of the man who was greater than any sculptor living, mentioning other Frenchmen who were popularly regarded as the greatest, "because he had more to say, and sees farther into life and art." Both busts were afterwards shown in Brussels and London.

The art-lovers and critics of Paris, London, Brussels, Antwerp, Pau, Nice, Ghent and Caen, had seen during the past four years all the works that Rodin had thus far exhibited. It is safe to say that no other sculptor of modern times had produced so strong and varied

an impression, and been received with more admiration by the most intelligent and liberal representatives of those two classes. The only serious antagonism that the sculptor had aroused was in his own country. That had not diminished, nor was it likely to, for it was based on a natural temperament as strong as that which was seen in Rodin's statues. The history of the Hugo bust is an interesting one. Sometime in 1883, M. Edmond Baziere, one of the editors of the Paris journal, *L'Intransigéant*, and an ardent friend of Rodin, and who wished to have him make a bust of the poet, went with him to see Hugo to consult about it and arrange for some sittings. Unfortunately, the latter had just completed giving a wearisome number of hours for the same purpose to another sculptor, and he did not feel disposed to begin again. But a member of Hugo's family, who was not pleased with the bust, was very desirous that Rodin should at least make an attempt in some way, and as a preliminary step he was cordially invited to come to Hugo's house every Sunday evening, dine, and study his subject as best he could.

After a number of these agreeable visits the sculptor brought his modelling stand and clay, established himself out-of-the-way, in one corner of the veranda, and began his work, without in any way disturbing or expecting the poet to pose expressly for him. The bust was practically made from memory, the sculptor first looking at Hugo, wherever he might be, and then returning to his clay and working out the result of his observation, losing, of course, much that he had seen and been impressed with, in going from the subject to his work. It was a difficult and almost endless task, and the bust was only completed about six months before Hugo's death. By many of the poet's friends it was, at first, regarded as a complete failure, but time gradually developed its merits, and those who at first disliked it became its enthusiastic admirers. Rodin made two wax-process bronze copies, giving one to the Hugo family and retaining the other for himself.

To assist him in modelling the bust the sculptor had made many sketches, on paper, of his unwilling sitter from every possible point-of-view.

Soon after Hugo's death, an iron merchant of Besançon, commissioned M. Sagot, a Paris dealer in art and rare books, to buy everything that he could find in any way connected with the poet. As the distinguished qualities of Rodin's bust had become well known to M. Sagot, he went to the sculptor to get a copy of it, and while there he learned of the existence of these drawings. The result was that both bust and drawings, eighty in all, went into the possession of the Besançon collector. As fate would have it, in a few years, this admirer of the poet met with pecuniary reverses, and the bust, with other objects, was advertised to be sold at auction in the city of Lyons. M. Sagot hastened to the sale, and to the comfort of his pocket, as well as his surprise at the narrow geographical range of familiarity with Hugo's physiognomy, he found that no one knew whom the bust represented, nor saw its merits as an art production. He bought the bust for ten dollars. The drawings have disappeared, and not all of M. Sagot's perseverance and enterprise have been able to find them.

Rodin also made two etchings of Hugo's portrait from these drawings. Several bronze copies of the bust have been sold, and the Paris Society of the Men of Letters has a plaster copy. Not long ago the city of Paris ordered a marble copy.

It need hardly be said that Rodin's social and professional relations with Hugo were of the most agreeable description. At his table the sculptor met the most distinguished persons in Paris. Here are some of his observations: "Hugo had the air of a Hercules; belonged to a great race. Something of a tiger, or an old lion. He had an immense animal nature. His eyes were especially beautiful, and the most striking thing about him. As a man he was large and agreeable, no personal pride. When he showed pride it was outside of himself. He always had twelve or fourteen guests at his table, and being somewhat deaf he heard little of the conversation, but often in the very midst of it he would break out with some astonishing observation. It was not until two or three years after his death that I really saw the man, the amplitude of his character, and felt the force of his private work and impersonal nature."

T. H. Bartlett.

[To be continued.]

The Illustrations

[Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.]

DOORWAY TO HOUSE OF JOHN PEABODY, ESQ., MARLBOROUGH ST., BOSTON, MASS. MESSRS. PEABODY & STEARNS, ARCHITECTS, BOSTON, MASS.

[Gelatine print, issued only with the Imperial Edition.]

SKETCH FOR A MEMORIAL LIBRARY, LEXINGTON, KY., BY MR. WILLIS POLK.

STORE BUILDING FOR MAJ. J. F. H. PHIPPS AND MRS. R. R. WALLACE, ST. LOUIS, MO. MR. A. F. ROSENHEIM, ARCHITECT, ST. LOUIS, MO.

The building has a frontage of 70 feet by depth of 65 feet, is 6 stories and basement high and is to be used for wholesale business purposes. The first 2 stories are carried up in Portage Entry and Marquette (Lake Superior) red and brown sandstone alternating, in courses crandled and quarry faced. The upper 4 stories are carried up in brown brick of chocolate color for facing, and Portage Entry red stone for trimmings, the effect being uncommonly good, and the unusually deep reveals at windows being very effective. The interior construction is what is called slow-burning or mill construction, girders composed of 2 pieces 8″ x 16″ Georgia pine bolted together at regular intervals and these carry, on wrought-iron stirrups, cross beams 6″ x 12″, anchored thoroughly to said girders at intersections. At right angles to these beams and on top of same is laid a 3″ yellow pine tongued-and-grooved flooring, and again on top of this and in the opposite direction a 1½″ maple flooring, the whole making an exceedingly stiff and rigid floor. Iron columns throughout fireproofed and plastered. Plate-glass, hydraulic elevators, electric-lighting, and in short all modern conveniences and appliances. Total cost $100,000. To be completed about May 1, 1889.

VENTILATING TOWER FOR THE PRESBYTERIAN HOSPITAL, MADISON AVE., NEW YORK, N. Y. MESSRS. J. C. CADY & CO., ARCHITECTS, NEW YORK, N. Y.

This is one of a series of buildings now erecting for the Presbyterian Hospital. It was recently completed. The tower forms the main exhaust shaft for the system of ventilation, which is connected to all the buildings by means of large underground ducts which when completed will cover an entire block. The rest of this building is used for dispensary purposes, excepting the cellar, in which are located the fans and other machinery necessary for driving the ventilating apparatus.

SKETCH FOR STABLE AND BILLIARD-ROOM, PELHAM, N. Y. MESSRS. WALGROVE & ISRAELS, ARCHITECTS, NEW YORK, N. Y.

Building is to be entirely covered with shingles and billiard-room to be finished in yellow pine; to have all improvements and to cost about $3,000.

BUSTS OF VICTOR HUGO, DALOU, ROCHEFORT, LEGROS AND LAURENS. M. AUGUSTE RODIN, SCULPTOR.

See article elsewhere in this issue.

COTTAGE NO. 4, WATCH-HILL, R. I. MR. HOWARD HOPPIN, ARCHITECT, PROVIDENCE, R. I.

HOUSE FOR MRS. ALICE BACON, LOUISVILLE, KY. MR. C. J. CLARKE, ARCHITECT, LOUISVILLE, KY.

HOUSE OF ALEXANDER URE, ESQ., TORONTO, CANADA. MESSRS. KNOX & ELLIOTT, ARCHITECTS, TORONTO, CANADA.

THE POPP COMPRESSED AIR SYSTEM IN PARIS.

Every visitor to Paris has noticed the pneumatic clocks which stand at the corners of the streets, and in the rooms of the principal hotels and public buildings. When indoors, they attract attention by the absence of the ordinary ticking, which is replaced by an unusual click, occurring every minute. If the mechanism of one of these clocks be investigated, it is found to be exceedingly simple, the principal part being a small cylinder with a piston. This cylinder is connected by a small flexible tube with a network of fixed pipes running through the building, and these are again coupled to a main in the street. Every minute a wave of pressure circulates through the entire system of pipes, and the hands of all the clocks make an advance. There are an immense number of these clocks in Paris, the total on October 31 of last year being 7,800. Their installation has been greatly facilitated by the system of so-called sewers which exist in the city, for the main pipes can be laid in these without breaking the streets. It would be more correct, according to English ideas, to denominate these underground conduits as subways, for they consist of passages having a drain in the centre, with a footpath at each side, and ample head room for a man to walk through. Even the liquid flowing through the drain is much less foul than ordinary sewage, owing to the prevalent use of cesspools.

The notification of time by means of compressed air was begun in 1879 by the Compagnie Générale des Horologes et Forces Pneumatiques. In 1886, the company, which then underwent reconstruction, enlarged its sphere of action, and obtained a concession for forty

years for the distribution of compressed air for motive-power purposes. An air-compressing installation of 3,000 horse-power was laid down at Belleville, and the work was pushed on with such energy that there are now 55 kilometres (34) miles of compressed-air-mains in action, in addition to 65 kilometres (40 miles) of pipes for the time service. The two trunk mains of the compressed air service are each 11.8 inches in diameter. The first, which is in operation, starts from the Rue Saint Fargeau, descends to the Place de la Republique, which it traverses, and then follows the grand boulevards as far as the Madeleine. The other descends parallel to the first as far as the Rue des Pyrénées, runs to the Place de la Bastille, and follows the Rue St. Antoine and the Rue de Rivoli as far as the Place de la Concorde, where it joins the first in the Rue Royale. This second main is not yet completed. The distribution to the houses is made by pipes varying from 1½ inch to 4 inches in diameter, according to the demand to be met. On October 1, 1888, the demands for power from these mains amounted to 400 horse-power for manufacturing and trade purposes, and to 589 horse-power for generating electric-currents to feed 4,200 incandescent-lamps and 107 arc-lamps. There are six central electric-lighting stations equipped to utilize 100 horse-power each, and three of 50 horse-power each. In addition there were three private installations 50 horse-power each at theatres, eight installations varying from 10 to 25 horse-power at cafés and restaurants, one of 45 horse-power at the office of the *Figaro*, one of 12 horse-power at the Hôtel Meurice, and four of smaller sizes, making 350 horse-power in all. Air is also supplied to thirteen sewing-machine factories, to four ice manufacturers, to thirty-nine turners taking about 2 horse-power each, to sixteen printers aggregating 43 horse-power, to thirty-five saw and moulding mills, taking about 70 horse-power in all, and to eighty-six miscellaneous industries.

Paris presents a capital field for the exploitation of such a system as this. Its industries are nearly all small ones, and require only a moderate amount of power. But when the power is derived from a steam-engine the expense is relatively great. The police regulations do not permit of boilers being placed on upper stories where the work can be best carried on, while small engines and boilers are notoriously inefficient, and cost almost as much for attendance as motors of much larger size. Gas-engines offer great advantages to small manufacturers, but when the gas costs 7*s.* a thousand feet, as it does in Paris, they are not economical. These facts explain the great success of the Compagnie Parisienne de l'Air Comprimé, Procédes Victor Popp, which, in little more than two years, has sprung into a most flourishing position, and is advancing by leaps and bounds. In the interval between October 31 and December 20 of last year there was an increase in the air delivered for power purposes of 78 horse-power, and for electric-lighting purposes of 264 horse-power. Financially, the undertaking is in a capital position: we have before us an account of the receipts and expenditure, which, however, we are not at liberty to publish, but which shows that the shareholders will receive a most satisfactory return on their capital.

After several tentative attempts have been made at electric-lighting the Municipal Council of Paris has determined that the time has come at length for a comprehensive scheme, and in the last days of December a concession was granted to the Popp Company for an area extending from the Madeleine in the west to the Place de la Bastille in the east, and from the line of the Rue de Rivoli in the south to the grand boulevards in the north. This is in many respects the most important section of Paris from an electric-lighting point-of-view. It is more than two miles long and nearly a mile wide; it is crowded with cafés, restaurants, theatres, shops and hotels, all of which will, sooner or later, abandon the use of gas. The competition for the concession was keen, the following interests being represented: Rothschild (Marcel Desprez), Edison (Compagnie Edison), Cencier (representing Donon), and Milde (representing a group). The Popp Company was chosen as presenting the best guaranty of giving satisfaction to the public for electric light and power; they propose to lay down plant immediately, it being estimated that 150,000 lamps will be required eventually.

It is well known that distribution by compressed air has a very low efficiency unless the air be heated before it is employed in the motors. According to a report by M. Joseph Francois, the air, if employed cold, has an efficiency of 46 per cent; if heated to 200° C. (392° Fahr.) previously to being employed in the motor, it has an efficiency of 64 per cent, while, if water be injected into the heated air, the efficiency rises to 87 per cent, as by the following table:

EFFICIENCY OF COMPRESSED-AIR DISTRIBUTION SYSTEM.

—	Cold Air.	Heated Air.	Heated Air with Injection of Water.
Weight of air delivered per indicated horse-power of motors	110 lb.	78 lb.	58.6 lb.
Volume of air per indicated horse-power	1363 cub. ft.	974 cub. ft.	727 cub. ft.
Temperature of compressed air at motor	68 deg. F.	392 deg. F.	392 deg. F.
Temperature of exhaust	—66 "	32 "	122 "
Efficiency of compressed air	46 per cent.	64 per cent.	87 per cent.

It is stated that these results have been found by experiment, though they appear to be very high; they are about 8 per cent better than those calculated for under similar conditions by the promoters of the Birmingham Compressed-Air Power Company. By the consumption of .44 lb. of coke and the injection of 6.6 lb. of water per horse-power per hour, the efficiency is raised to 87 per cent, it is said. For practical purposes, M. Francois takes the efficiency at 80 per cent, and on this basis he has made a calculation of the cost of working fifteen air-compressing machines of 400 horse-power indicated (6,000 horse-power in all). He estimates the buildings at £18,000, the land at £14,000, the compressing machinery and boilers at £84,000, the pipes at £54,000, the air engines and fixing at £20,000, and other expenses at £10,000, or £200,000 in all. M. Francois assumes that the installation will be at work sixteen hours a day on an average of the entire year, basing his assumption on the experience of the Campagnie Parisienne de l'Air Comprimé, and on the hypothesis that secondary batteries will be used in electric-lighting. He puts the coal consumption at 2.2 lb. per hour, equal to £100 a day; wages at £32; accessories and repairs at £8; and salaries at £4, or an aggregate of £144 per day for the compressing station. The supervision of the motors he estimates at £16, and the management of the company at £20, the total daily expense being:

	£
Interest and *amortisation*	65
The compressing station	144
The motors	16
General expenses	20
	245

With the assumed efficiency of 80 per cent, the customers would receive 4,800 × 16, or 76,800 horse-power hours per day, which would cost to supply £245, or about 76*d.* per hour. If the cost of the coke is reckoned at one-tenth of a penny, the total expense may be estimated in round figures at one penny, which is an addition of 16 per cent for losses of various kinds.

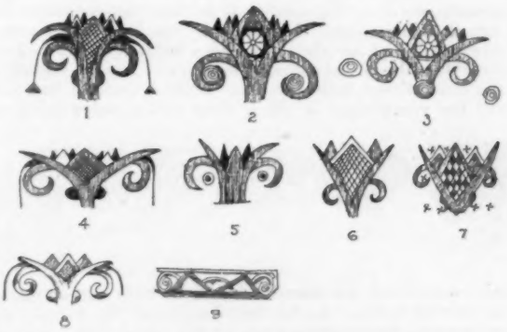
It is interesting to compare this estimate with that made in 1883 by Messrs. English, Hannsen, and Sturgeon for the Birmingham scheme. In the latter case the expense of the plant came to £200,000, as in Paris. The indicated power of the compressing engines was 8,400 horse-power. They were, however, only estimated to work at full power ten hours a day, against sixteen in Paris, so that the fixed expenses per hour were, consequently, greater. However, there was a great saving in the item of coal, which costs 6*s.* in Birmingham, against 20*s.* in Paris. Wages and salaries stand for £4,900, repairs and renewals for £5,000 a year. The total sum of the yearly expenditure is £21,000, against £65,000 in Paris, £28,000 of the difference being due to the coal bill. On the other side of the account, it is estimated that the customers will pay for 5,000 horse-power for about twelve hours per day during six days a week, or for about ten hours a day during seven days. The average price is put down at £9 a year per horse-power, or about ½*d.* per hour. Such a sum would pay all the expenses, and would leave £24,000 a year to pay 12 per cent interest on the capital.

The two estimates are sufficiently alike to confirm each other in many respects, but the Parisian scheme has a great advantage in the number of hours the machinery is expected to be at work. We may safely assume that a great part of the power will go for electric-lighting, for the manufactures and miscellaneous industries of the city will only absorb a small proportion of it, unless there should be a very great extension in the way of refrigerators and cold stores. We believe that this is an outlet which is expected to develop very largely, and it will offer the additional advantage that it will make the greatest demands in summer, when the least artificial light is required. The surplus power will be used during the daytime for charging accumulators, and in the evening part of the lighting must be done by batteries charged during the day, and part by current supplied direct from the dynamo in the evening. By this plan, both the compressing plant and the dynamo could be kept nearly continuously at work during the winter months.

The scheme is one of very great magnitude, and will be watched with much interest in all parts of the world. — *Engineering.*

THE LOTUS IN ANCIENT ART.[1] — II.

THE IONIC CAPITAL AND THE LOTUS.



I HAVE described the different varieties of lotus known to Egyptian decoration. That this flower was its dominant decorative motive, and that it was thus used as a symbol of immortality and of the resurrection, and as a solar, lunar and generative emblem,

[1] Continued from No. 685, page 69.

sacred to all three members of the Egyptian Trinity has been shown from the highest living authorities in Egyptology, as it is also clearly to be gathered from the monuments themselves. The Phœnician adaptations of Egyptian mythology and art symbolism in general, and of the Osiris, Horus and Isis cult in particular, with its attendant lotiform symbols have been alluded to as matters of current historical information. These with the dependence of Cypriote Phœnician art on Egyptian models has been made apparent.

It has also been pointed out that the Cypriote Greek art of all periods so closely followed its early Phœnician models that a separation of the Cypriote Greek from Cypriote Phœnician motives in pottery or otherwise, is frequently or generally impossible.

It has been observed that this Cypriote Greek art represents the first progressive stage of the Greek art, or rather its introductory stage, down to a certain period — say in the seventh and eighth centuries B. C., and that it subsequently continued in this introductory stage owing to certain Oriental and conservative tendencies of the Greeks of Cyprus long after the Greek art farther west had abandoned its childhood and archaic period.

In the Cypriote lotus motives, whether on pottery or in stone, we are, therefore, always dealing with forms typical of an early period, however late the individual pieces may be.

It has been shown in the preceding article that the lotus flowers represented on Cypriote vases occasionally exhibit exterior scrolls or incipient volutes which are rude imitations of the downward curling calyx-leaves of the natural flower, as also illustrated from nature in that article. Such vase motives are also shown in the details 1–8 inclusive, in this paper. Among these details No. 8 shows a step further in the conventional direction apparent in No. 4, as appears in the diminished number of petals. In both these cases where the proportions most nearly approach that of the Ionic capital, the vases from which the motives are taken, are of such a shape and panelled in such a way that the expansion of the volutes and depression of the petals is clearly an adaptation of the floral motive to the oblong and narrow shape of the panel into which it is compressed. We have, then, in these two details 4 and 8, so far as vase decoration is concerned, a palpable approach to the shape which a similar lotus form might be expected to assume when used as an architectural decorative motive under pressure, when due allowance is made for the extra conventional quality belonging naturally to stone-carving.

No. 9 is a Cypriote proto-Ionic stone capital which approaches quite closely the general appearance of the detail 8. It is figured in Colonna-Ceccaldi's "*Monuments de Chypre.*" This work is a posthumous publication of the student whose suggestion as to the lotiform origin of the Cypriote stèle, figured at 10, was noted in the preceding paper. This stèle is reproduced in this article for convenience of reference and comparison. Unhappily, the capital in question (No. 9) was published from a design found among Colonna-Ceccaldi's papers after death, without comment or description. It is, therefore, placed at the close of the book which is otherwise mainly a collection and republication of articles from the *Revue Archæologique*, with a few similar inedited designs and memoranda. Measurements are figured on the capital in the original publication, and it is indexed with the word "Dali," the present name of the ancient Idalium of Cyprus. The said indication of locality or derivation is followed by a mark of interrogation.

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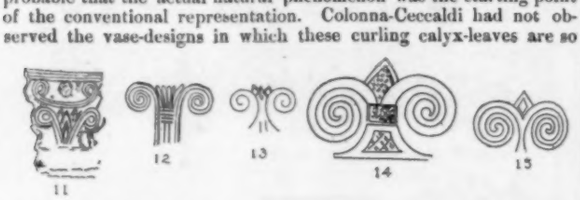
If Colonna-Ceccaldi had lived to edit this capital, he would probably have made a more successful interpretation in detail of the connection between the lotus and the proto-Ionic stèles and capitals of Cyprus than that recorded in my preceding paper, or, at least, he could have pointed out analogies with the Ionic form which are immediately obvious. So far as the lotus flower is concerned, we have seen that he considered the volutes of No. 10 to be conventional representations of curling petals. It has also been remarked that, as an actual matter-of-fact, the petals of the lotus never curl over or downward, and, as the calyx-leaves constantly do, it is more probable that the actual natural phenomenon was the starting-point of the conventional representation. Colonna-Ceccaldi had not observed the vase-designs in which these curling calyx-leaves are so



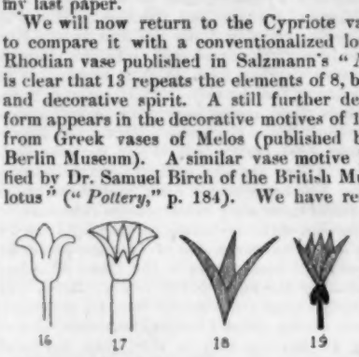
11 12 13 14 15

clearly represented, nor does he appear to have noticed this phase of the natural flower. As for the triangles of No. 9, these are obviously conventional reminiscences in stone-carving of a representation of two petal triangles analogous to that of the vase-design, No. 8. The intermediate curve is a conventional or decorative modification of the central triangle of No. 8 and related vase-designs.

No. 11 is a Cypriote stone stèle (tombstone) in the Metropolitan Museum of Art. The lower portion is clearly a lotus flower with conventional exterior volutes. The entire design may be compared with the vase-designs numbered 1 and 5. Cases of a more conventional proto-Ionic form, in which the volutes also rise from the lower part of the capital, are seen occasionally in the terminal supporting ornaments of furniture, as shown on Greek vases. Compare the Ionic of Mashnaka, Figure 38 of this paper.

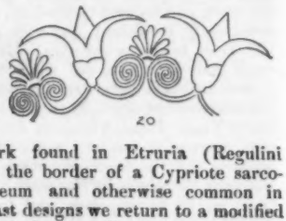
An analogous conventional Ionic design (Figure 12) is found in an Egyptian ceiling decoration of the eighteenth dynasty (eighteenth century B. C.) taken from the plates of Prisse d'Avennes, and may be compared with Mr. Clarke's capital from Neandreia, figured in my last paper.

We will now return to the Cypriote vase-design, No. 8, in order to compare it with a conventionalized lotus pattern taken from a Rhodian vase published in Salzmann's "*Nécropole de Camire.*" It is clear that 13 repeats the elements of 8, but in a more purely Greek and decorative spirit. A still further departure from the original form appears in the decorative motives of 14 and 15, which are taken from Greek vases of Melos (published by Professor Conze of the Berlin Museum). A similar vase motive has been previously specified by Dr. Samuel Birch of the British Museum as "a sort of trefoil lotus" ("*Pottery,*" p. 184). We have reached, then, in these last designs a lotus motive consisting simply of a triangle between two spirals. Similar simplications of the lotus motive, where the spirals do not appear, may be quoted here as analogies which are already familiar to students, and which will presently assist the argument on the Ionic capital. For instance, the Egyptian motive 16 is a recognized simplification of a lotus motive like 17 (both taken from designs in Rosellini's "*Monumenti*").



16 17 18 19

In the same way 18 is clearly a simplication of 19, both lotus motives from Cypriote vases in New York, and the floral forms between the palmettes in 20 from an Etruscan cist are familiar lotus motives and already recognized as such in Greek decoration.



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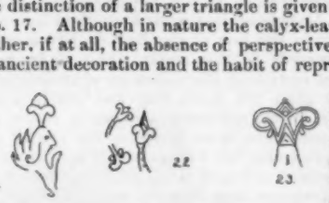
Before beginning the comparisons for proto-Ionic capitals let us finally notice the following conventional lotus patterns, 21 and 22 from Egypto-Phœnician metal-work found in Etruria (Regulini Galassi tomb) and 23, detail from the border of a Cypriote sarcophagus in the New York Museum and otherwise common in Phœnician decoration. In these last designs we return to a modified conventional form of the exterior spirals or scrolls combined with the central triangle.

We will now return to the Cypriote lotus patterns which furnish the starting-point of the argument in order to determine what this central triangle is. In these patterns (1 to 8 inclusive) it is clearly distinct from the petals. It undoubtedly represents the central calyx-leaf. In all Egyptian lotuses where the petals are represented the distinction of a larger triangle is given the centre calyx-leaf as in No. 17. Although in nature the calyx-leaves all curl downward together, if at all, the absence of perspective and foreshorting methods in ancient decoration and the habit of representing the central calyx-leaf as a larger triangle in lotus motives without the scrolls or spirals, as in 16, 18, 20, would explain this combination, Thus an explanation is reached of the conventional forms 14 and 15 as related to the natural flower. The central triangle is a reminiscent form of the central calyx-leaf represented erect. In the process of conventional elimination of minor details the petal triangles have disappeared entirely. Nos. 8 and 13 represent the intermediate conventional step.



21 22 23

If we now approach the proto-Ionic forms in architectural examples by way of the capital of the Sippara tablet reproduced from my first paper at 24, it becomes sufficiently clear that we are dealing here with a conventional form of lotus. The intermediate steps as far as forms in stone are concerned are all illustrated by 9 and 11.

There are cases of Greek-Ionic designs, of a comparatively late date, in which the central triangle still remains as reminiscence of the lotiform Ionic. No. 25 is a capital from a Greco-Etruscan relief dating as late as the third century B. C., (from Conestabile's "*Perugia*)." No. 26 is the decoration of a bronze mirror handle found at Olympia ("*Olympia*" Plate XXII, Vol. IV) dating about 500 B. C.

24 25 26 27

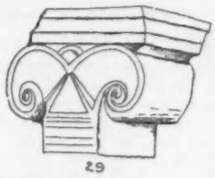
In No. 27, a capital from a Greek vase published by Mr. Clarke in his article already quoted, this triangle has been transformed into a curve just as the central calyx triangle is modified into a curve in No. 9.

The decisive significance of certain proto-Ionic stèles and capitals

from Cyprus for the history of the Ionic capital now becomes apparent — in view of the transitional character of the art of this Island — of its geographical location as a connecting point between the Oriental culture and the Greek, and in view of the fact that Cypriote art continued in the grooves of the Oriental Greek stage long after the further development of the Western Greek art. In the case of No. 10 there are positive grounds for not assigning an earlier date than 500 B. C., connected with the style of the sarcophagus with which it was found, but the central triangle between the volutes is undoubtedly a survival of the central calyx-leaf of the lotus. (Not a representation of the ovary as suggested by Colonna-Ceccaldi — it will appear subsequently that the lotus ovary is represented by a rosette.) The upper introrse scrolls of this stèle will be subsequently explained. A stèle (probably a tombstone) of related form in the Louvre (28) shows that we are dealing with a type and not with an exceptional case.[1]

Two Cypriote capitals, also in the Louvre, show the same significant triangle (Nos. 29 and 30). The curve which joins the volutes in 29 appears to be a decorative development from the crescent in 30. Here the association of the solar disk and crescent, familiar emblems of Phœnician worship of the sun and moon, or of gods which personified them, carries us back to the previously noted connection

28.



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between the lotus and the worship of the sun. A similar association with the solar disk and crescent appears in the Louvre stèle, No. 28. Whether or no we are dealing with a conventional survival of emblems which had lost their significance, it is immaterial to inquire. That the association did originally have a significance is fairly proved by No. 11. The head, which appears about the lotus flower, is clearly seen in the original to be one of Hathor (Isis) the Moon-Goddess, where relation to the lotus has been explained.

That the Ionic capital had originally a hieratic and sacred significance is probable from the engraved Assyrian cylinder published by Layard, "*Culte de Mithra*," from which the detail 31 is taken, and from the support of the solar disk on the Sippara tablet.

For the Egyptian association of the lotus with the god Horus and the solar disk see the preceding article, and compare the Hittite relief at 35 of this paper, where Ionic capitals support the Egyptian solar-winged disk — a form of the god Horus (Pierret, as quoted).

The presumptions established by the foregoing comparisons may be summed up as follows: Assyrian proto-Ionic forms are like the Cypriote in retaining the rudimentary signs of a lotiform origin. As Egypto-Phœnician influences on Assyrian decorative art are known to have been powerful and manifold, there is no *à priori* difficulty in admitting that the proto-Ionic forms were among them. The Assyrian inscriptions, especially those of Largon, expressly state that Assyrian palaces were imitated from those of the Syrian Hittites,

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whose ornamental art, so far as known, has mainly a modified Egyptian style. As all the lotus motives of ancient art are admitted to have been originally Egyptian, the Ionic form is originally Egyptian if it be a lotus motive.

The question may now be asked: If the Ionic form is Egyptian, why do we not find it in Egypt? I answer that we do find it. The cut herewith (33) from Rosellini's "*Monumenti*," Vol. II, Pl. LXXXI, is the handle of a mirror, to be sure, but it is clearly an imitation of an architectural column and capital, and the Ionic volutes are portions here of a conventional lotus. Cut No. 34 is decisive (reproduced from the foregoing article). It is one of the series published by Prisse d'Avennes from Egyptian wall-paintings, in which originals in metal or in wood, or in the two materials combined, are to be presumed. Belonging to the eighteenth and nineteenth dynasties, these forms antedated any of those known to Assyrian art by a number of centuries. They are not less than seven centuries earlier than the earliest Assyrian Ionic forms, and as we know that Assyria was an Egyptian province under the eighteenth dynasty, we are not even under the necessity of assuming a Phœnician intervention as regards the transmission. The lowest member of this capital is a conventional lotus bud. The next is a lotus flower of the form most commonly known to Egyptian art, associated with two lotus buds. Above this we observe that form of the lotus-Ionic capital in which the calyx triangle appears between the calyx volutes, a common Egyptian architectural form, as seen at Figure 37 of this paper.

The top member of the capital shows an absolutely Ionic form so far as the upper line joining the volutes is concerned. The ornamental detail figured at 12 is another instance of Ionic forms in Egyptian art to which other illustrations can be added. The Hittite relief at Boghaz Keni, in Asia Minor, where proto-Ionic capitals support the winged solar disk, may be also adduced as an illustration (35). The monument may be Hittite, and the art may be Phœnician, but the winged disk carries us back to Egyptian influence and the association of the lotus with Horus, one of whose forms is the winged disk, is a parallel with the appearance of the solar disk and crescent in Nos. 28 and 30, and with the appearance of the head of Isis Hathor at 11. The date of this Hittite relief is probably not later than the second millennium B. C.

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The Egyptian Ionic forms illustrated at 36 and 37 are not especially remote when we consider the number of Ionic capitals now known in which the spirals rise from the necking. The instance illustrated at 38 is probably Syro-Phœnician, antedating the Greek influence in Syria (from a relief at Mashnaka, published in Reber's "*History of Ancient Art*," p. 42).

The absence of Egyptian lotus-Ionic forms in the existing stone monuments, in contrast with the multitude of capitals like 36 and 37, represented in paintings and reliefs, is undoubtedly explained by the fact that, in Egyptian use, these forms were confined to architecture in wood; with or without metal decoration. It has been abundantly pointed out that the Ionic capital was originally designed for construction in wood (see, for instance, Mr. Clarke's article). The Greeks simply imitated or modified in stone capitals of wooden architecture, which have, consequently, disappeared. The absence of Egyptian stone architectural forms like 33 is thus explained. The lotus-Ionic volutes were not sufficiently solid in aspect for the severe and massive taste of Egyptian stone construction and decoration.

It has been observed in the preceding paper that the Persian explorer, M. Dieulafoy, has specified No. 37 as an Ionic form and as a lotus derivative, and that he has made it his starting-point for a theory of the Egyptian Ionic in which the volutes are conceived to represent petals bending downward under pressure, and the intermediate member is supposed to represent the ovary. My reasons for dissenting from this last interpretation will appear later. The reasons for supposing the calyx-leaves, rather than the petals, to have been the initial motive of the Ionic volutes are already apparent. It is certainly to be admitted as a possibility that a form like 37 is a decorative exaggeration of the form 16, which is a simplification of 17. It is clear that the volute of 36 could be easily reached from the curves of 37. If any one should prefer this theory of the lotiform Ionic, I will only ask that judgment be held in abeyance until the observations on the anthemion and on its peculiar relations to the Ionic capital have been offered.

It is true that Cypriote vase-designs of the second millennium B. C. are not a conclusive link in a chain of proof relating to Egyptian forms which are possibly much earlier as regards the type. We can only insist on the persistence and long-established typical character of all forms in Oriental art; on the continuance in Oriental art of initial conventional forms long after highly remote decorative developments of the same have been reached; on the intimate relations

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between Egypt and Cyprus; on the rarity of decorated pottery in Egyptian tombs; and on the fact that the study of Egyptian pottery is admittedly the most backward branch of Egyptology. The point that my own observations are the first published on the lotus-volutes of Cypriote pottery is an indication that something of the same kind may be almost any day discovered or brought to notice in Egyptian design.

In general, and aside from M. Dieulafoy's observations, the significance of the Egyptian Ionic forms has been disregarded even by authors who have published them. As explained in my last paper, all standard authorities have considered the Assyrian Ionic as

[1] The more strictly archæological aspects of the subject as regards authorities, references and quotations, etc., are more fully published in the *American Journal of Archæology* (Vol. III, Nos. 3 and 4).

original of the Greek. The only formal announcement of the significance of the Egyptian Ionic (aside from M. Dieulafoy) has been made by Auer in his paper on the Egyptian origin of the Doric Triglyphs (p. 356, *Zeitschrift für Bildende Kunst*, 1880), and without reference to the lotus.

Some explanation of the reasons why the Assyrian proto-Ionic designs have so far thrown these palpable and much earlier Egyptian Ionic forms into shadow, may appropriately be offered as conclusion of this article. The only satisfactory treatment of proto-Ionic forms is that which considers the relations and analogies between all of them, and which unifies all of them under one point-of-view. The only basis for such an examination is that which takes the lotus as a starting-point. As soon as the lotiform development of the Ionic becomes clear, the Egyptian phases of it take their proper place. Otherwise the Egyptian voluted capitals may readily be considered as having only an accidental resemblance, and as being too remote in time and place for any relations with the Greek Ionic.

Another consideration is this. The study of the foreign origin of Greek art has only been developed since the time of Assyrian discoveries, *i. e.*, since 1800. Assyriology has attracted that extra amount of attention which is always claimed by a new study as against an older one, and all the analogies with Greek art discoverable in it have received the same preponderant amount of attention. For the same reason the palpable dependence of Assyrian art on Egyptian and Egypto-Phœnician ornamental forms has not received due attention. It has not been sufficiently observed that the campaigns and conquests of Assyria in Egypt during the eighth and seventh centuries B. C., resemble those made by Spain and France in Italy during the early sixteenth century. In both cases the military strength is that of the more brutal, more recently civilized nations, and the civilizing influences are those of the older and, physically, weaker state.

We cannot, of course, ignore in Assyrian art and history the superior importance of the earlier Chaldæan culture, but no traces of any of the decorative motives under consideration have been found so far in this earlier Chaldæan art.

Of all authorities so far, Reber[1] has come nearest the truth regarding the Ionic capital in suggesting that the volutes of the Assyrian proto-Ionic originally represented the curling leaves of a plant. "There is reason to suppose that the double helix was not the primitive and normal form of the Assyrian capital, but was rather an abbreviation of the leaved calyx so frequently met with in Phœnicia, Palestine and Cyprus, and that the rolled ends of the leaves originally suggested the volutes of the capital and the various spiral forms occurring upon carved Assyrian furniture" (Plate 70 of the work cited). To Reber's view we have only to add the point that the plant in question is the lotus with the consequent conclusion that the form is derived from Egypt. This point he does not reach as appears from his matter relating to Solomon's temple (Page 150), where he says: "It is to be observed that the normal Egyptian bell-calyx, without additions, could not be spoken of as having the form of a lily, by which name the curled ends of leaves were usually designated in the Orient. The volutes referred to must have been similar to those upon the Assyrian capital, etc." At Page 231 he also alludes to the Assyrian origins of the Ionic capital.

To a satisfactory argument on the origin of the Greek Ionic capital it is still necessary to add one point — an explanation of the palmette form which appears in the Ionic capital found by Mr. Clarke at Chigri, illustrated in the preceding article, (*American Architect*, February 9, 1889) and which also appears in the Athenian capitals recently published by Mr. Trowbridge (*American Journal of Archæology*, Vol. IV, No. 1). Before this explanation can be offered the subject of the Greek anthemion must be taken up — these capitals being simply phases of it. The demonstration of the lotiform origin of the anthemion will comprehend the Chigri and Athenian capitals and will react on the demonstration for the Ionic capital in an absolutely conclusive way. The anthemion is perhaps, best approached by way of the "rosette" and this subject again may be made clearer by some preliminary remarks on the so-called papyrus motives of Egyptian decoration. Wm. H. Goodyear.

[To be continued.]

Cliff Dwellings in Morocco. — Cliff dwellings are found in great numbers in Morocco which are now and probably have been inhabited from the time of their first construction. These dwellings in all particulars are like those found in Arizona and New Mexico on this continent. A New York paper speaks of them as follows: It was not until last year that the Moors would permit any examination of the cliff dwellings which have long been known to exist some days' journey southwest of the city of Morocco. The strange city of the cave-dwellers is almost exactly like some of those in New Mexico and other Territories, which archæologists have explored. The dwellings were dug out of the solid rock, and many of them are over two hundred feet above the bottom of the valley. The face of the cliff is, in places, perpendicular; and it is believed that the troglodytes could have reached their dwellings only with the aid of rope-ladders. Some of the dwellings contain three rooms the largest of which are about seventeen by nine feet, and the walls of the larger rooms are generally pierced by windows. Nothing is known as to who these cave-dwellers were. — *Exchange.*

[1] "*History of Ancient Art*"; translated by Joseph Thacher Clarke. Harper & Bros., 1882.

HOT BATHS OF ANCIENT ROME.[2]

The Pope's Loggia, Siena, Italy.

There is no ancient treatise extant on the hot baths of Rome, nor on their methods of bathing. Celsus and Galen, being physicians, naturally only treat of the bath as forming part of the treatment in cases of disease. We gather, however, that the methods were much like those adopted in our Turkish baths; some went gradually from the warm room, through the hot, into the laconicum; and some began with the laconicum and went gradually through the cooler rooms, and in both cases then took the cold bath. And much of the bathing was done by having buckets of water of different temperatures poured over the bathers. Some were oiled before they began to bathe, some during the process as well, and all were so after it; some, of course, with perfumed oil or unguents. Julius Cæsar left 3,000,000 pounds of oil annually to the bathers of Rome. Before the final unction they had been strigilled and shaved.

In Lucian, who lived in the time of the Antonines, there is a description of a public bath built by Hippias, an architect, and a friend of Lucian. In it there is no mention of the laconicum, but it gives us some notion of the way of bathing, though this bath was probably very insignificant as compared with the vast Roman Thermæ. "After you have passed a lofty vestibule, to which you ascend by a flight of steps of an easy ascent, you enter a spacious hall, proper for attendants to wait in. To the left are rooms set apart for the company before they leave the baths, the most elegant and cheerful of any. As you advance you enter a room, not wanted in the baths, but appropriated to the more opulent; after which, on both sides, are places for your clothes. The middle of this room is exceedingly lofty, very light, and contains three lavacra of cold water, ornamented with Lacedemonian marble; in the same room are marble images of ancient work, one of Health and another of Æsculapius. As you go out of the room, through an oblong, vaulted passage, the house grows sensibly warmer, although the heat is far from being disagreeable; this passage leads to a very light chamber on the right hand, where you may be supplied with unguents; this room, likewise, has a communication with the Palæstra, and both sides of the door are cased with Phrygian marble.

"The next apartment is the most beautiful of any yet mentioned, being resplendent with Phrygian marble to the very ceiling; in it are many conveniences for sitting; it is also sufficiently extensive for walking or taking exercise. On going out you enter a hot passage, long enough for a race, and encrusted with Numidian marble, which leads you to a very elegant and light room, painted of a purple color; in it are three warm baths. After having bathed you need not return by the same way you came, but slowly by a shorter way, which brings you to the cold bath through a warm room, gradually decreasing in heat. All these rooms are exceedingly well lighted from the top.

"Hippias has wisely constructed the room which contains the cold bath so as to front the north; the other apartments, which require a greater degree of heat, he has exposed to the south, southeast, and west."

The Romans had no thermometer, so we cannot tell what the precise heat was, but the water seems to have been hot.

Athenæus gives the following lines (*lib.* 1, *cap.* 32):

> "Plague take the bath! just see the plight
> In which the thing has left me;
> It seems t'have boil'd me up, and quite
> Of strength and nerve bereft me.
> Don't touch me, curst was he who taught a
> Man to soak in boiling water."

That stoic philosopher, Seneca, whose business Macaulay describes as being "to declaim in praise of poverty, with two millions out at usury; to meditate epigrammatic conceits about the evils of luxury in gardens which moved the envy of sovereigns; to rant about liberty while fawning on the insolent and pampered freedmen of a tyrant; to celebrate the divine beauty of virtue with the same pen which had just before written a defence of the murder of a mother by her son,[3] was very severe on the heat of the water in the baths, and says: "It is hot enough to boil a naughty slave in."

Both Martial and Celsus describe the heat of the laconicum as dry heat. If the heat was anything like that of our Turkish baths, from 230° to 300° Fahrenheit, and there were water in it, the bathers would, I should think, have been scalded to death with the steam.

[2] Extract from a lecture before the students of the Royal Academy by Professor Aitchison.

[3] "*Lord Bacon*," Macaulay's Essays.

I read an account of a fire-king at a country-fair who remained in a hot-room till a fowl was cooked, and then ate it. A chemist who happened to be there, and had ascertained that there was no trick, thought it over, and concluded that the heat was possible to be borne from the air being dry; next day he inserted unseen a bowl of water, and shortly afterwards the fire-king burst open the door, half scalded to death.

The recesses round the laconicum, *i. e.*, in the thickness of the wall, are paved and lined with white marble slabs, and have seats. One that remains looks like a water-bath, though I saw no exit, but some believe that they contained no water, but were used by old bathers, who could not get heat enough in the room; for they must have been hotter, as, in addition to the hanging-floor, the walls were lined with flue-pipes. In Pliny the Younger's letter to Romanus he tells us that Macedo, a person of Prætorian rank, whose father was a slave, was trampled to death by his servants, who "threw him upon the burning pavement of the hot bath to try if there was any remaining life in him."

Many think that the Roman method of bathing is still adhered to in the East. I can give you my experience of bathing in one of those in Cairo, and I trust that the ancient Roman ones were not so offensive to the sense of smell.

I was first ushered into a vast hall, lit by a lantern, with a raised seat for the bath-keeper and a baldachino over the coffee-stove, with a fountain in the middle of the hall. The whole hall was gorgeously painted, and had towels drying on the tie-beams, which the attendants hung up and took down by means of long bamboo poles. A little above the main floor were a series of carpeted compartments, each as big as a small room. Here I undressed and wrapped myself in cloths, while my interpreter folded up my clothes and tied them up in a sheet. I was then led by an attendant across the hall to a dark passage, and was ushered into a darkish hot room, where I sat on a marble seat, and I was gradually moved from room to room, each of which was hotter than the last, until I was taken into a light-domed room, with a central peristyle, in the middle of which was a large steaming tank of water, with steps running down into the water. The walls were lined with white marble, inlaid with colored ones in patterns; the domed porticos of the peristyle were plastered and lit by star-shaped openings, several in each dome, the space between each arch and the wall being domed.

Within the marble margin of the bath was a gutter. I was laid down at the side of it, rubbed with a horsehair glove, and then soaped over and scraped with a sort of artificial sponge, composed of dried grass resembling diminutive bamboo. I was then washed by hot water being poured over me from a large copper cup, and when this was finished I was made to walk down the first step and sit down with my legs in the water, which was nearly scalding. I was then made to sit lower and lower, till I was up to my middle; the attendant then went into the bath, caught hold of my hands, and jumped me into the hot water, and put my head under it several times. I was taken back by the passage into another darkish room, where two marble basins, projecting from the wall, were running over with hot and cold water; water was dashed over me from a cup, at first hot, afterwards tepid, and at last quite cold, and I was then led back to the place where I undressed. I was then dry-shampooed, and every joint in my body cracked, including my backbone, both backward and sideways.

The Egyptians had their heads shaved, their beards combed, their nails cut, and their feet rasped. After my dry-shampooing I was covered up, laid on a cushion, given a cup of black coffee and a narghiley. I felt quite refreshed and ready for dinner, though I had started at 2 A. M. that day, and been up the big Pyramid and into the King and Queen's chamber, and had a long ride back.

As I think we know enough about the exercises, and all I can tell you about the method of bathing, I will go back to the plan.

SOCIETIES

YOUNG MEN'S CHRISTIAN ASSOCIATION, NEW YORK.

THE Library Committee of the Young Men's Christian Association of New York invited, on Washington's Birthday, the architects and students of the architectural schools of the city, to an exhibition of books contained in their library, on architecture and the decorative arts. The exhibit was from 11 to 5, and during those hours several hundred visited the library. Much surprise was expressed at the extent and richness of the collection. Only a partial display of the books could be made, as the capacity of the tables was not sufficient for all. The library contains about 600 volumes, in the two sections exhibited; 450 in the line of architecture, of which upwards of 350 are folio and quarto volumes, and 118 volumes of folios in the decorative arts.

The collection embraces works on architecture by Pugin, Alberti, Gailhabaud, Fergusson, Viollet-le-Duc, Ruskin, Vitruvius, Street, Britton, Daly, Rickman; and on decoration by Prignot, Berian, Audsley, Claessen, Dresser, Day, Jacobstahl ("*Die Grammatik der Ornamente*") Liénard, Daly, Gerlach, Pugin, Shaw, Adrouet. There is a complete set of the *American Architect* in the library and of the *Revue des Arts Décoratifs*.

BOSTON ARCHITECTURAL CLUB.

THE Boston Architectural Club held its fortnightly conversazione Thursday evening, February 28, at the club-rooms, 6 Hamilton Place.

The subject of the evening was "Architectural Travelling in Europe."

Mr. Peabody read notes of his travels in England.

Mr. Newton traced the best routes through Spain, indicating where to depart from the usual paths to advantage.

Mr. Andrews described the various changes and influences in the architecture of France, and pointed out where they are the most clearly distinguished, leaving to the student the choice of the locality appealing to his individual taste.

Mr. Bacon described the more convenient ways of reaching Athens and Olympia, and Mr. Walker dwelt at some length on Italy and what to see there.

The discussion was closed by Mr. Blackall who gave some details of necessary expenses, etc.

The water-color exhibition by members of the Club closed February 27, and was well attended.

The principal exhibitors were: E. C. Cabot, F. H. Bacon, C. H. Walker, Ross Turner, R. A. Cram, R. C. Sturgis, and included sketches abroad and many drawings of local interest.

RESOLUTIONS OF RESPECT TO THE LATE H. M. BLAKE.

Whereas, in the inscrutable ways of an all-wise Providence, our Superintendent has been removed from us by sudden death, we, associated with him, desiring to express our deep sympathy with his wife and family in their affliction, do unite in this expression of our warm regard for him, and deplore deeply his death.

Words are inadequate to express our sorrow, and language cannot console in this sad bereavement, but we cannot refrain from some expression, and so convey this, our sympathy, as best we can. May He "Who doeth all things well" have ever in His keeping the wife and children left behind, and raise up many and warm friends who will care for the widow and fatherless.

Be it resolved, that a copy of the above resolutions, adopted at a meeting of the employés of the late Howard M. Blake, be forwarded to his family and near relatives, and that they be inserted in the Boston *Herald* and *American Architect*.

D. W. GRAY.

For the employés of the deceased.

IN MEMORIAM.

JAMES HOWARD SPRUANCE, a young architect of Philadelphia, who recently won a prize for design in a competition at the Philadelphia Chapter, A. I. A., died at Denver, Colorado, on February 22, in his twenty-third year. He was buried from the residence of his parents, James W. and Fannie C. Spruance, near Smyrna, Delaware, on Thursday, February 28, at 1 P. M.

COMMUNICATIONS

FEES ON PARTY-WALLS.

KANSAS CITY, MO., February 21, 1889.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—If an architect contracts with a client to furnish general drawings, specifications and details for a store building at the usual rate per cent on the cost of the completed building, on one or both sides of which is a party-wall in place, one-half of which it is expected will be used and paid for by the client, is it usual and customary to include the value of such half of party-walls in the cost of the completed building in computing the architect's fees when it is not specifically mentioned in the contract? Can you cite any legal decision in which the architect is allowed for the value of party-walls in arriving at the amount of his fees? If you will do me the favor to answer, it may be of interest to others in the profession.

Yours truly, A. V. B.

[IT is usual, so far as we know, to pay architects commission on the portion of the party-wall acquired by their clients. We do not think there is any recorded decision on the subject. — EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS

THE CHURCH ORGAN AT LIBAU, RUSSIA.—A correspondent of *La Science en Famille* says that in the Protestant church at Libau, Russia, there is an organ which occupies the whole width of the church, about 60 feet, and which has 131 registers, 8,000 pipes, and 14 bellows of large size. It has 4 harpsichords and 1 pedal. The largest pipe is formed of planks 3 inches thick and 31 feet in length, and has a section of 7 square inches and weighs 1,540 pounds. Besides the 131 registers, there are 21 accessory stops that permit of combining various parts of the instrument without having direct recourse to the registers. By special pneumatic combination the organist can couple the four harpsichords and obtain surprising results. — *Exchange.*

Vandalism in Florence.—"Ouida," in a second letter to the London *Times* in regard to recent atrocities perpetrated in Florence under the pretence of improvements, says:

Every one knows the great hall of the Cinque Cento in the Communal Palace, where of old 1,500 delegates could meet in the name of the ancient liberties of Florence. In this grand hall of Cronaca and of Vasari there is to be seen, at this present moment a common painted wooden partition, cutting the mighty chamber in two; behind this wooden paling are displayed the designs and programmes of the rival engineers and architects who aspire to attain the eternal infamy of destroying and reconstructing the centre of Florence. The cheap and common wooden boarding, the poor and paltry drawings and prospectuses, side by side with the superb frescos under the glorious ceiling and the superb archway, beside the statues of Leo X and Giovanni of the Bande Neri, with the white majestic form of Savonarola fronting them, are an apt and curious symbol of the mean and tawdry tastes of modern life, contrasted with the stern and splendid achievements of the past. No juxtaposition of dignity and imprudence was ever more distinctly displayed than in this infortuitous exhibition of the municipal projects of to-day in the great hall of Il Cronaca. The slightest sense of proportion—nay, even, the smallest spice of that humor for which their forefathers were famous—would have saved them from this bathos. The projects for the demolition of Florence should have been exhibited anywhere sooner than at the Palazzo Vecchio, where the very shields on the walls, the very lilies and crosses of stone, seem to cry out against them.

"Once we were lions, and then we fought. Now we are sheep, and we only follow," said an Italian to me but yesterday. It is sadly true. The rage for imitation—imitation of all the most trivial and destructive temper of modernity—possesses Italy in the persons of its municipal counsellors. That these counsellors do not in any sense represent the better part of public feeling is certain; you will probably find that your London Council will not do so either. Election by vote has a charming promise in its sound; but its practical result is usually that the best men stand aloof from submitting to its coarse struggles and its questionable awards. Allow me, in conclusion, to demur to your opinion, that none except Italians born on the soil have a right to treat of Italian matters. Gregoravius has deemed it his duty (as it was) to print his just, if unavailing, protest against the present ruin of Rome. It cannot be doubted that were Byron, Shelley, Keats, Stendhal, George Sand, Jules Janin, Châteaubriand, or Savage Landor all living now, they would write as I write. Swinburne, in his lines to Landor, calls on the city to remember him:

> "And thou, his Florence, to thy trust
> Receive and keep,
> Keep safe his dedicated dust,
> His sacred sleep;
> So shall thy lovers, come from far,
> Mix with thy name,
> As morning star with evening star,
> His faultless fame."

Florence was his (Landor's), because he loved her unspeakably. Think you that Dante would not more willingly have seen a Florentine worthy of the soil in Savage Landor than he would see one in any of the shameless contractors and architects hungering for her ruin, or in the rapacious lawyers and speculators who would break up the Venus de Medici into rubble, and melt down the Perseus into copper money, willingly, if they could?

Tunnelling the North and East Rivers, New York.—Two years ago Heman Clarke, the well-known contractor, broached a scheme for a great system of tunnels under New York City and the East and North rivers, connecting the city with the suburban points. Little attention was paid to the plan, as it was considered too expensive to be practicable. To-day Mr. Clarke announces the completion of the arrangements for carrying out the great work. A capital of $150,000,000 has been guaranteed of which $30,000,000 is considered sufficient to do the tunnelling. The tunnels will be 150 feet below the surface, thus avoiding all buried wires, gas-pipes, etc., and avoiding any difficulty with the rivers. The main tunnel will extend from the City Hall in New York to Fleetwood Park on the north, under Brooklyn to Coney Island on the east, and under Jersey City to Newark. There will be four tracks. Freight and passengers will be carried. The passenger trains will run at full express speed. Elevators will convey freight and passengers between the street stations and the tunnel. The plan for carrying freight will relieve the city streets of much trucking. Cars will be brought under the larger stores, and freight can be lowered directly to them. Negotiations are now pending with the city government for the required permission to begin work.—*Exchange.*

Curious Water-wheel.—There is a water-wheel in use at Bowdoinham, Me., which is probably the only one of its kind in existence. It is twenty-seven feet in diameter, with a foot of its rim out of water at high tide; the spokes are wide and set diagonally, like the vanes of a windmill. It turns eighteen hours a day by tide-water, running one way with the flow, the other with the ebb. With one foot fall of the tide this wheel gives about fifty horse-power.—*Commercial Advertiser.*

TRADE SURVEYS

So far the weekly and monthly statistical statements of railroad companies and large commercial and manufacturing organizations reveal what business men and financiers regard as a most healthful trade condition. If there are any latent evils they have not given indications of their existence. There is no issue before the country in which business men are deeply interested. The pressure for a national bankrupt law is increasing; the construction of a formidable navy is in progress. Financial conditions reveal no weakness, although there are reasons for apprehending stringency in time. The producing interests are not making complaints as to excessive taxation or immoderate rates of interest. The National Government stands close to the people, and the various State Governments are the willing servants of the people in all things, except where organized corporate interests are concerned. Even here there is a looser grip upon legislation, and a score or more of laws, of more or less drastic character, are up for passage; the ostensible purpose of which is to curb corporate rapacity or power. Matters are moving along in the right direction. The percentage of mishaps in business is not increasing, rather declining, considering the increasing volume of business. This is surprising, too, when we count up the increase in manufacturing and general productive capacity that has been added during the past three years. No such additions as have been made during those years was then dreamed of. The most important, and usually least noticed, has been the increase in shop and factory capacity. Over one hundred thousand traders have been added to the list, and only about thirty thousand have dropped out, leaving an increase of seventy thousand to transact the business of the country. The volume of business has increased fully 30 per cent, but this does not represent the actual increase or potential increase in capacity. Hundreds of millions of dollars have been invested during that time which has not yet become productive, except in small part. The competition which it involves has not yet been felt. In short, the adjustments which this enormous increase of capital necessitates has not yet been effected, and when it does take place, it will exert a very marked influence on trade, and production in general. Not a single injury has followed from this rapid outflow of money. Financiers themselves confess to feelings of surprise and of gratification at the outcome of these extraordinary expenditures in every conceivable direction. A time and condition have been reached, which, in the opinion of a few of the more conservative managers of great financial and industrial operations, calls for a rearranging of lines of action, a recasting of the charts of trade and a revision of plans. These, however, are in the minority. The great body of managers and pushers are too busy with new and inviting schemes and enterprises to patiently consider a scheme to apply the air-brakes; in fact, they are opposed to brakes altogether, and feel that things will take care of themselves. Long-headed financiers rather lean to this view of the case and are quite willing to loan, and loan money; and let obligations of one character or another, pile themselves up millions upon millions until a crisis, a crash comes, when through forced sales the lenders of money will be able to sweep in the pledged properties at enormous sacrifices. They recognize that this has been the course of things ever since the dawn of the commercial age, and while it is to be regretted that such sweeping trade revolutions must come, it is their duty to take advantage of them. The rank and file of business men do not, in the least, suspect such a possibility, much less such a thought on the part of the money-lending interests; but all doubts can be cleared up if the proper source is appealed to. It is the strongly entertained conviction that among a certain class of financiers in high places, that the present bounding prosperity and activity will not continue without interruption. Reference is made to it only that precautionary steps may be taken by those who are in a position to take them. When the actual danger comes, comparatively few will be able to cast anchor. But what is it, it may be critically asked, that is to check existing prosperity and precipitate misfortune? No specific answer need be, or can be made, as every set of new conditions brings different results.

So far as the danger of mere over-production is concerned, it can be measurably guarded against by trade and manufacturing combinations; but when the evil develops itself to restrict consumption, or through a widespread inability to make settlements, then no mere artificial restriction will avail. The chief point to be dwelt upon now is that the money-lending interest contemplate the possibility within a few years of securing much better returns than they now do. Commercial and business enterprise will especially display itself in the year 1889 by seeking new channels of activity. Schemes by the score are coming up, all apparently well capitalized. The managers of the vast coal interests of Northern Alabama are contemplating making New Orleans a coal depot for the Gulf Coast and the West Indies, where the distribution is between three and four million tons per annum, equal to the entire output in Eastern markets of the mountain soft-coal mines of Pennsylvania, Maryland, and West Virginia three years ago. With the completion of the progressing government improvements on the Warrior River, involving the outlay of a half million dollars, the channel will be opened for cheap water transportation for the excellent soft coal or that region to New Orleans, a distance of 650 miles, in place of a dangerous and costly two-thousand-mile float from Western Pennsylvania, the present source of supply. Canal-building enterprises will also receive attention as soon as the purely agricultural and manufacturing interests of the country begin to predominate in the State and National councils over selfish corporate interests. Several thousand miles of canal are already built on paper and filed away until the right hour comes for the smaller interests. Experts in mineral lore believe that the production of precious metals, lead, copper, and even tin, will increase quite rapidly during the next few years. The undesirability of railroad investments has led to numerous large investments in mines and mineral territory in the West and Southwest. The capitalization of new companies within the past four months is moderately estimated at fifty million dollars. The weekly orders for new and expensive mining and milling machinery in our machinery centres show the strength of the movement of capital into this inviting field. It was General Grant who, some years ago, predicted some day an extraordinary development of mineral wealth in the Southwest, and the practical steps taken of late by capitalists in that direction make it look as if his prediction might be verified soon. The opening up of Oriental marts, and the encouragement of the far Eastern nations to adopt the arts and methods and industries of the Western nations, is creating and will continue to create a greater demand for silver especially. Gold follows the behest of commerce, but the drifting tendencies of trade go to show that we will as a nation profit much more in the future with the increasing production of gold than we ever have profited. Considerations of this kind may possibly appear to have no immediate and direct relation to our business affairs, but in truth they lie at the bottom of permanent prosperity. The gold and silver miners of the West are doing more to lay strong trade foundations than the men who build ships and transport shop and factory products to remote lands. Along with this enterprise comes the heretofore recorded development of valuable coal properties, which is leading to hundreds of little shop and factory and foundry industries. Coal and coke will in a year or two be about as cheap, the longer or shorter haul being considered, as in the East. It has been the want of fuel that has held the West back so long, but now that the miners have been encouraged to effort, it is safe to predict that industries that have been hugging the Alleghany Mountains will seek shelter under the shadow of the Rockies.

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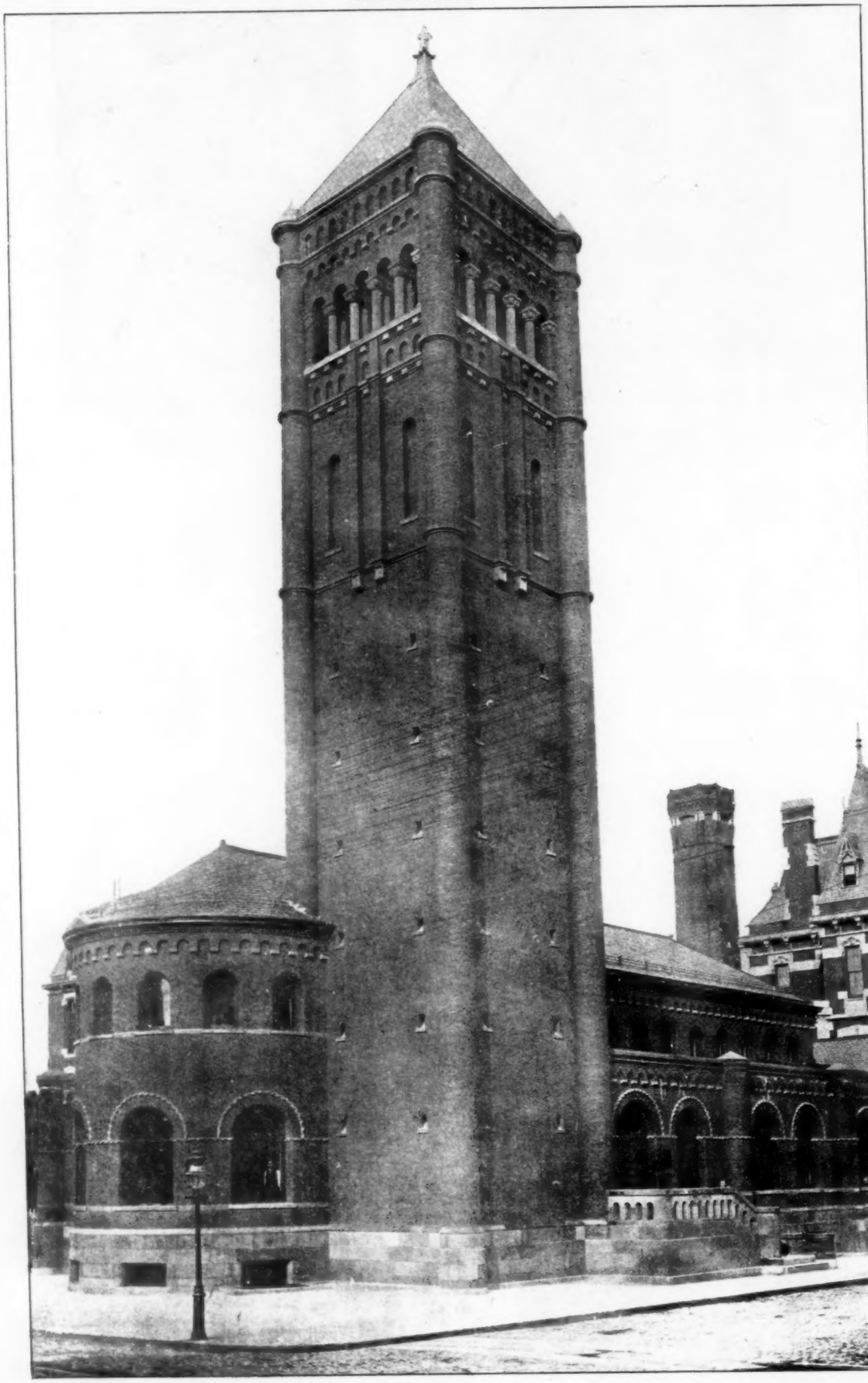

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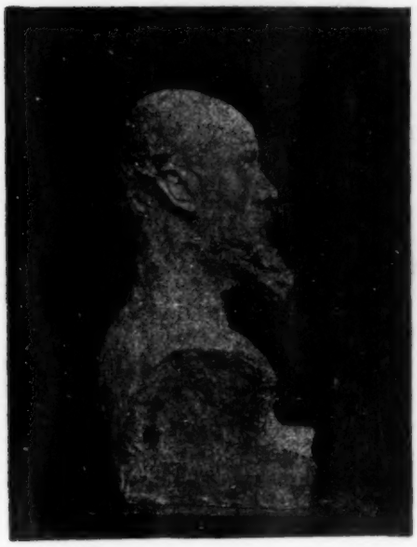

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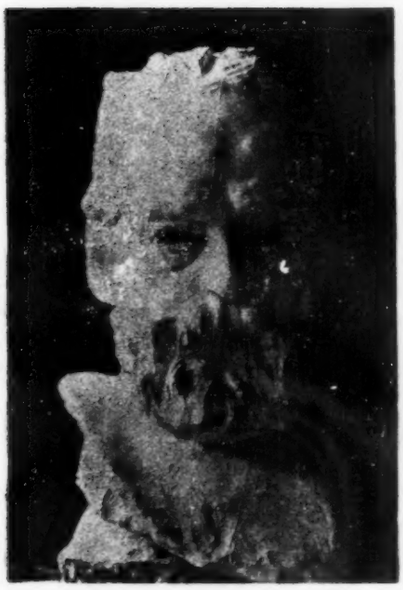

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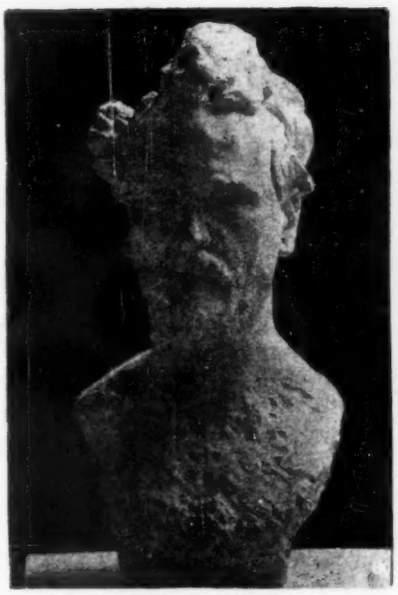

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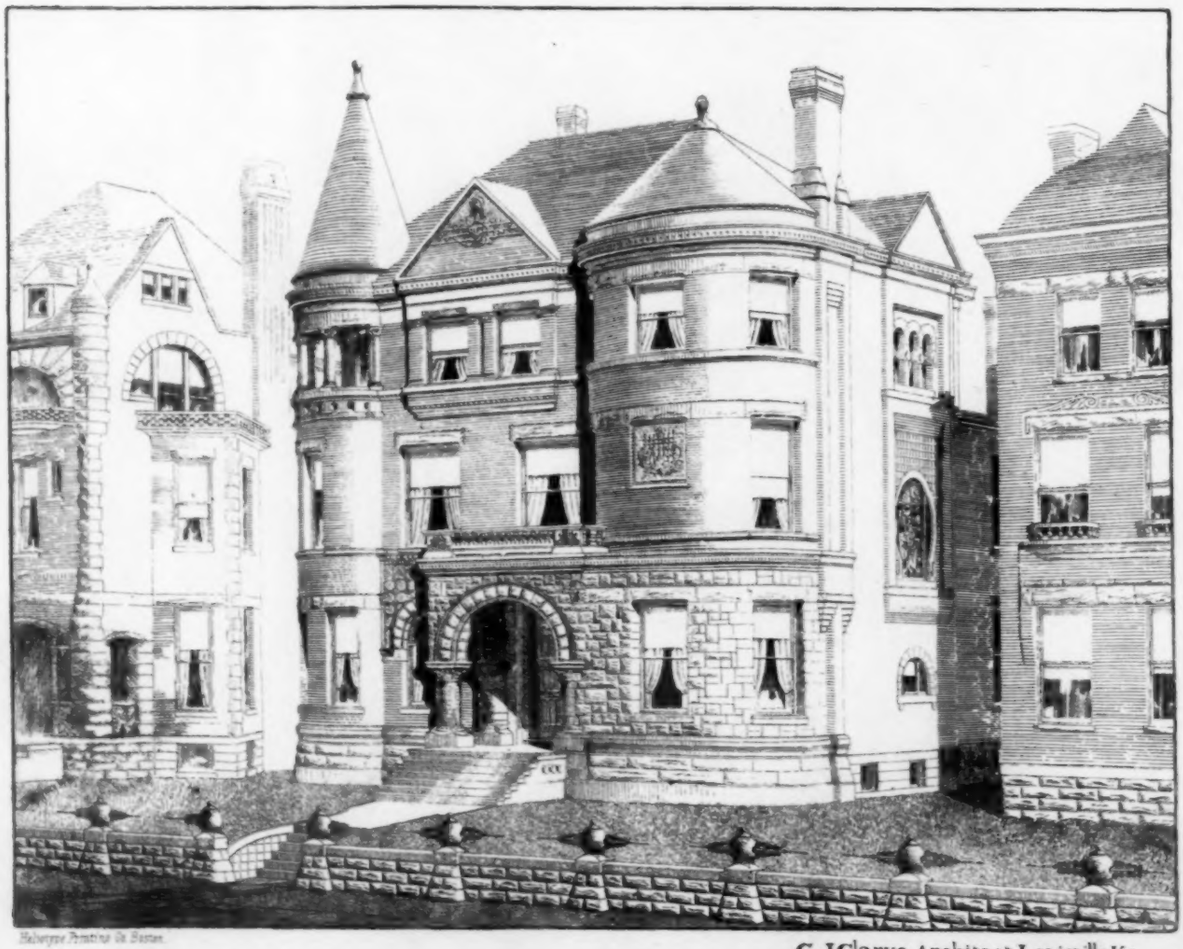

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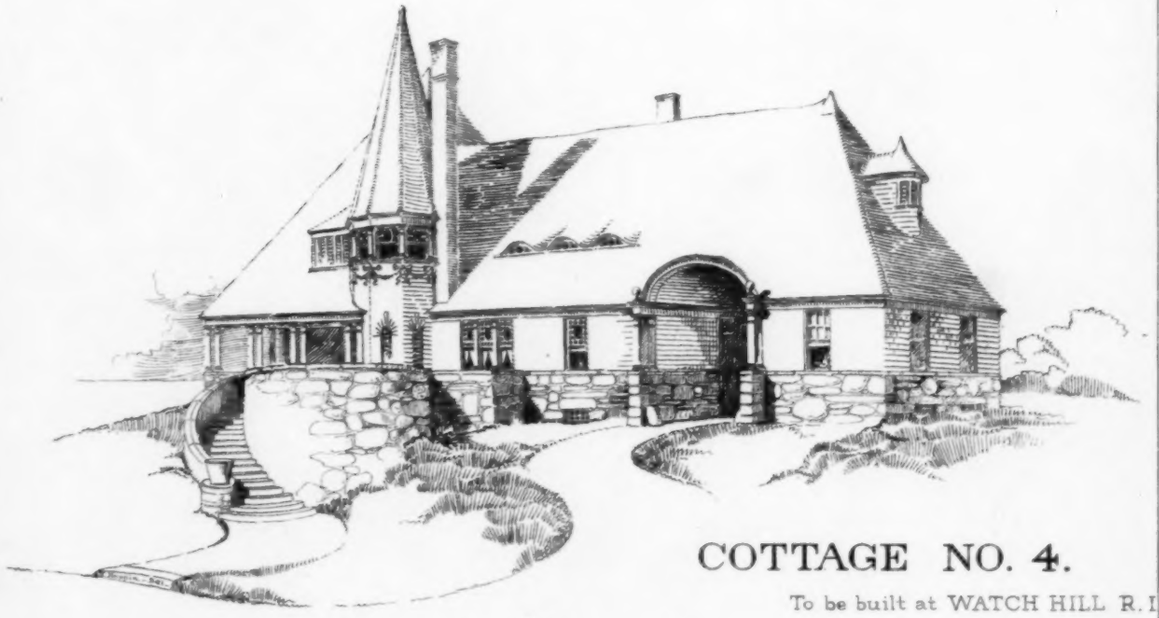

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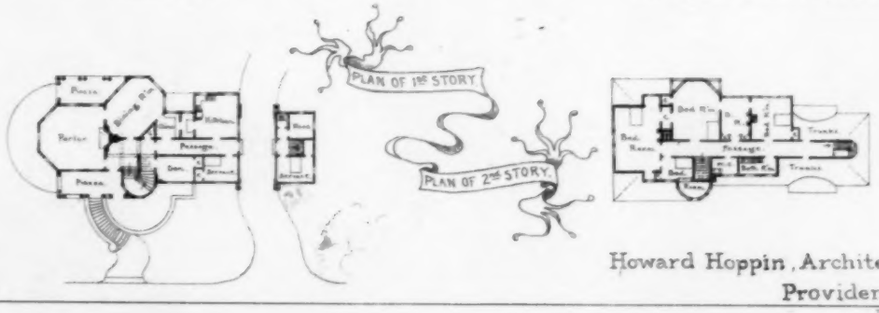

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Providence, R.I.

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